CORRES. CONTROL
OUTGOING LTR NO.

DOE ORDER #

04 RF 01139

DIST.	LTR	ENC
BERARDINI, J.	X	
BRAILSFORD, M.D		
FERRERA, D.W.	X	
FERRI, M.S.		
FULTON, J.C.		
GIACOMINI, J.		
HALL, L.		
MARTINEZ, L.A.		
PARKER, A.M.		
POWERS, K.		
SCOTT, G.K.		
SHELTON, D.C.	X	
SPEARS, M.S.		
TRICE, K.D.		
VOORHEIS, G.M.		
WIEMLET, K.L.	X	X
THORNBURG, AMY	X	
COR. CONTROL	X	X
ADMN. RECORD	X	X
WASTE REC. CTR.		
TRAFFIC		
PATS/130		
CLASSIFICATION:		
UCNI		
UNCLASSIFIED		
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER SIGNATURE
Exemption – CEX-105-01

Date

IN REPLY TO RFP CC NO:

ACTION ITEM STATUS
☐ PARTIAL/OPEN
☐ CLOSED

LTR APPROVALS:

ORIG & TYPIST INITIALS

Revision 7/04

KAISER•HILL
COMPANY

November 4, 2004

04-RF-01139

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DOE, RFPO

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TRANSMITTAL OF THE DRAFT NFAA JUSTIFICATION FOR PAC 000-505, STORM DRAINS – KLW-037-04

Enclosed are copies of the Draft NFAA Justification for PAC 000-505, Storm Drains. We will contact your staff to schedule a meeting the week of November 15 to resolve comments and finalize the text.

If you have any questions, please contact me at extension 9883.

R. Lee Norland for
Karen L. Wiemelt
Manager, Environmental Restoration Programs

KLW:dm

Orig and 1 cc – Joseph Legare
cc: Norma Castaneda

Enclosures:
As Stated

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Kaiser-Hill Company, L L C
Rocky Flats Environmental Technology Site, 10808 Hwy. 93 Unit B, Golden, CO 80403-8200 • 303-966-7000

IA-A-002434

1/37

NO FURTHER ACCELERATED ACTION JUSTIFICATION

FOR STORM DRAINS

PAC REFERENCE NUMBER: 000-505

IHSS Number:	Not Applicable
Operable Unit	Industrial Area
IHSS Group	000-3
Unit Name:	Storm Drains
Approximate Location:	Not Applicable

Date(s) of Operation or Occurrence

1952 - Present

Description of Operation or Occurrence

In 1999, storm drains were identified as a Potential Area of Concern (PAC). At that time, 239 storm drains were estimated to be present at RFETS (Figure 1)[1]. The storm drains provide site drainage from roads, parking lots, and other areas and discharge into the creeks and drainages north and south of the Site. Some footing drains from site buildings also discharge to storm drains (DOE 1999a).

Physical/Chemical Description of Constituents Released

The storm drains were designed to convey surface water away from the Site but unplanned accidental discharges to the system have occurred. Several incidents have been reported and include the following contaminant release areas (DOE 1999a):

1. Potential contamination at Building 771 storm drain,
2. Wash water from the degreasing of depleted uranium parts near Building 991,
3. Release of nitric acid/nitradd[2] waste solution from Building 460,

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[1] The difference between Figure 1and the figure in the original PAC 000-505 description (DOE 1999a) is that the Interceptor Trench System [ITS] has been removed. The ITS is an underground pipe network in the northeastern corner of the Industrial Area that directs contaminated groundwater to the Solar Ponds Plume Treatment System. The part of the ITS that collected surface water was closed. Technically, this is not a system of storm drains. It is also an integral part of the groundwater Interim Measure/Interim Remedial Action at the Solar Evaporation Ponds, and therefore, its operation and ultimate disposition is covered under a separate decision document.

[2] Nitradd is a mixture of nitric acid, acetic acid, and ammonium bifluoride.

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4. Release of miscellaneous materials into the storm drain west of Building 446, PAC 400-803,
5. PCB runoff from Building 707,
6. PCB runoff from Building 444 Courtyard, and
7. Building 776 Storm Drain.

Various waste liquids from laundry and decontamination facilities, the analytical laboratory, radiography sinks, and runoff from the Building 771 roof and ground areas were discharged into the Building 771 storm drain from 1953 until mid 1957. Periodic releases from laundry holding tanks occurred until 1965. Radionuclide concentrations in soil ranged from 130 to 2000 disintegrations per minute per gram (d/m/g) and in sediment from 60,000 to 200,000 d/m/g (DOE 1999a).

Cleaning operations were performed on depleted uranium parts in the open courtyard of Building 991 during the late 50's and early 60's. Parts were degreased with acetone and other organic solvents. Spills and water wash downs were flushed into the storm drains which discharged into South Walnut Creek (DOE 1999a).

In April 1989, between 5 and 7 gallons of nitric acid/nitradd waste solution from Building 460 entered a storm drain that feeds into Pond C-2 (DOE 1999a).

Miscellaneous materials including silver paint and possibly oil and aluminum paint were dumped into the storm drain immediately west of Building 446 (DOE, 1999a).

Although there were no reported specific contaminant release events to a Building 371 storm drain or ditch, these drains and ditches were sampled in 1987 and they represent an 8th potential contaminant release area in PAC 000-505. The results of 1987 sample analyses are listed in Table 1. It is not known if samples were collected during a storm event or from standing water (DOE 1999a).

Table 1 Analytical Results from Building 371 Storm Drains and Ditches

Sample Location	Analyte	Results
Storm Drains	Gross Alpha	24 +/- 8 pCi/L
	Gross Beta	64 +/- 4 pCi/L
	pH	6.8
	NO_3 as N	0.53 mg/L
Ditches (North)	Gross Alpha	18 +/- 16 pCi/L
	Gross Beta	14 +/- 34 pCi/L
	NO_3 as N	1.27 mg/L
Ditches (South)	Gross Alpha	19 +/- 13 pCi/L
	Gross Beta	16 +/- 35 pCi/L
	NO_3 as N	0.33 mg/L

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Responses to Operation or Occurrence

Of the eight contaminant release areas noted above, a response to the occurrence is documented only for the first and the fourth, as noted in the following two paragraphs, respectively.

In September 1970, two 55-gallon drums of contaminated soil were removed from the Building 771 storm drain area and additional soil was removed in February of 1971. At least 50 drums of contaminated soil were eventually removed. Remaining soil was surveyed and results ranged from 120 to 3000 d/m/g (DOE 1999a).

The contractor was required to cleanup up the storm drain ditch west of Building 446 and disposition the waste. No other documentation could be found detailing the responses to potential releases from this occurrence (DOE 1999a).

Fate of Constituents Released to Environment

PAC 000-505 has been assessed to render a No Further Accelerated Action (NFAA) determination using the following approach. As discussed above, there are eight contaminant release areas associated with PAC 000-505. Contaminant release areas 1 through 5 and 8 have been characterized and/or remediated in accordance with the Industrial Area Sampling and Analysis Plan (IASAP) (DOE 2001) and the Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol for Routine Soil Remediation (ER RSOP) (DOE 2003a), and have approved NFAAs. Contaminant release areas 6 and 7 have been or will be characterized and/or remediated in accordance with the IASAP and ER RSOP; however, in addition, the storm sewers will be removed under the Decommissioning Program Plan (DPP) (DOE 1998) because of potential contamination within the sewers. Lastly, because PAC 000-505 encompasses other storm drains not associated with the specific contaminant release areas, sediment, surface soil, and subsurface soil data associated with these storm drains have also been evaluated to make the NFAA determination for PAC 000-505. The NFAA evaluation is discussed in detail below.

CONTAMINANT-RELEASE AREAS NOT REQUIRING STORM SEWER REMOVAL

The following six contaminant-release areas either have already been addressed through accelerated action activities, or supporting data indicates the contaminant release is not significant (Contaminant Release Area #8). The data support that storm sewer removal is unjustified on the basis of soil contamination. They are as follows:

Contaminant-Release Area #1 - 771 Building Storm Drain. This contaminant-release area is PAC 700-143 (771 Outfall). PAC 700-143 was proposed for NFAA (DOE 2004a). The Subsurface Soil Risk Screen (SSRS) and (Wildlife Refuge Worker) WRW (Action Levels) ALs (DOE et al 2003) were applied to the characterization data for this PAC. The risk screen did not indicate that soil removal at the outfall area was necessary. Surface and subsurface soil constituents that were above background were at concentrations well below the WRW ALs. Constituents above background in local alluvial groundwater were at concentrations well below the Tier I groundwater ALs, and

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almost none of these constituents were identified as being above background in surface and subsurface soil at the PAC. It was concluded that previous remedial activities at this IHSS effectively addressed the release of contamination. DOE received concurrence from CDPHE on the NFAA status for the site on September 7, 2004 (CDPHE 2004a).

Contaminant-Release Area #2 - Wash Water from Degreasing of Depleted Uranium Parts near Building 991. This contaminant-release area is IHSS 900-173 (Radioactive Site Building 991). IHSS 900-173 is part of IHSS Group 900-1. Characterization of IHSS Group 900-1 was conducted in accordance with IASAP Addendum #IA-03-03 (DOE 2003b). Analytical results from the characterization of this IHSS are presented in the Closeout Report for IHSS Group 900-1 (DOE 2004b)[3]. Based on analytical results and the SSRS, an NFAA was proposed for IHSS Group 900-1, which includes IHSS 900-173. DOE received concurrence by CDPHE of the NFAA status for IHSS Group 900-1 on March 31, 2004 (CDPHE 2004b).

Contaminant-Release Area #3 - Release of Nitric Acid/Nitradd Waste Solution from Building 460. This contaminant-release area is IHSS 400-205. IHSS 400-205 is part of IHSS Group 400-5 and was investigated in accordance with IASAP Addendum #IA-03-14 for IHSS Groups 400-5 and 400-6 (DOE 2003c). IHSS 400-205 is being addressed in the Data Summary Report for IHSS Group 400-5. Therefore, it is unnecessary to address this contaminant-release area in this NFAA evaluation.

Contaminant-Release Area #4 - Release of Miscellaneous Materials into the Storm Drain West of Building 446, PAC 400-803. In accordance with the IASAP Addendum #IA-04-14 for IHSS Group 400-4 (DOE 2004c), which includes PAC 400-803, characterization samples were collected and analyzed. Analytical results from the characterization are presented in the Data Summary Report for IHSS Group 400-4 (DOE 2004d). Based on analytical results and the SSRS, DOE received concurrence by CDPHE of the NFAA status for IHSS Group 400-4 on August 23, 2004 (CDPHE 2004c).

Contaminant-Release Area #5 - PCB runoff from Building 707. This contaminant-release area is PAC 700-1103. This PAC was remediated (DOE 1997), and the results from extensive soil sampling in the area proved that PCB-contaminated rainwater from the Building 707 rooftop did not migrate to the storm drain located over 100 ft. downgradient. Based on the site remediation and confirmation data, the site was proposed for NFAA. DOE received concurrence from CDPHE on the NFAA status for the site on May 6, 2004 (CDPHE 2004d).

Contaminant-Release Area #8 - Building 371 Storm Drains. The analytical data provided in Table 1 does not indicate a need for accelerated action. The gross alpha and beta concentrations in the storm drains are of the same order of magnitude as the surface water ALs (gross alpha [11 pCi/L] and gross beta [19 pCi/L]), only gross alpha is above the surface water AL in the ditches (and by a small margin [within a factor of 2]), and nitrate is well below the surface water AL (10 mg/L). Also, there does not appear to be any adverse impacts to surface water quality in the unnamed drainage just east of Building 371/374. A new performance monitoring location (SW018) was established in

[3] Characterization results for IHSS 900-173 indicated that analytes in soil were below the WRW ALs. Accelerated actions performed at IHSS Group 900-1 addressed other IHSSs, PACs, and UBCs.

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October 2003 at this location[4]. As shown in Table 2, americium-241 (Am-241), plutonium-239/240 (Pu-239/240, and total uranium at SW018 are all well below their surface ALs of 0.15 pCi/L, 0.15 pCi/L, and 10 pCi/L, respectively.

Table 2. Radionuclide Concentrations at SW018

Sample Collection Date	Am-241 (pCi/L)	Pu-239/240 (pCi/L)	Total Uranium (pCi/L)
10/13/2003	0.013	0.000	1.835
11/10/2003	0.000	0.000	2.584
12/18/2003	0.007	0.006	2.371
3/8/2004	0.004	0.021	1.950
4/12/2004	0.010	0.016	1.767
4/26/2004	0.008	0.017	2.953
5/11/2004	0.032	0.053	2.976
6/3/2004	0.020	0.040	1.849
6/18/2004	0.021	0.067	1.764
6/28/2004	0.006	0.022	2.438

CONTAMINANT-RELEASE AREAS WITH PROPOSED STORM SEWER REMOVAL

The following two contaminant release areas have been or will be addressed through accelerated actions; however, the storm sewers will be removed under the D&D program and a contact record will be generated to document the planned remedial activity.[5] The rationale for storm sewer removal is provided below.

Contaminant-Release Area #6 - PCB Runoff from Building 444 Courtyard. This contaminant-release area is PAC 400-801. The PAC represents the release of transformer oil from a transformer that was located on the roof of Building 447. Downspouts were located north of the transformer's former position, which would have allowed PCB contaminated runoff to infiltrate soils adjacent to Building 447. A storm drain is situated roughly twenty feet from the building and may have also been contaminated (DOE 1992). As part of the Site-Wide Evaluation of Known, Suspect, and Potential Environmental Releases of PCBs conducted in July of 1991, a sediment sample was collected from the storm drain sump, and the analytical results indicated the presence of PCBs at 54 ppm. This exceeds the WRW AL of 12.4 ppm.

The storm drain is in PAC 400-801, which is included in IHSS Group 400-3. This IHSS Group was characterized in accordance with IASAP Addendum #IA-03-06 (DOE 2003d). Based on the results presented in the Data Summary Report (DOE 2003e), IHSS

[4] This drainage receives runoff and storm drain discharge from the east side of Building 371/374. The station was established for monitoring potential Building 371/374 D&D impacts on water quality per the Integrated Monitoring Plan.

[5] D&D activities are implemented pursuant to the Decommissioning Program Plan (DPP) (DOE 1998). The DPP describes the process for determining the type of RFCA decision document required for demolition of a RFETS' building. For a highly contaminated building (plutonium production facility), a Decommissioning Operation Plan (DOP) is required. For other radioactive-contaminated buildings, a Notification Letter is issued pursuant to the RFCA Standard Operating Protocol (RSOP) for Facility Disposition (DOE 2004f).

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Group 400-3 has an approved NFAA (CDPHE 2003a). However, because of the PCB contamination in sediment within the storm sewer, the storm sewer and enclosed sediment will be removed, characterized as necessary for disposal, and disposed off Site in accordance with RSOP Notification Letter 04-RF-00979 for Building 447 (DOE, 2004e).

Contaminant-Release Area #7 - Building 776 Storm Drain. This contaminant-release area is in IHSS 700-150.2 (S), Radioactive Site West of Buildings 771 and 776. The south (S) designation refers to the radioactive site west of Building 776. On May 11, 1969, a fire occurred in Building 776-777. The IHSS is the result of plutonium being tracked outside of Building 776 by firefighting and support personnel, and was detectable on the ground west of the building. Rain carried the contamination into the soil, and although not specifically stated in the IHSS description, presumably into the storm drain that runs along the western side of the building. The storm drain was grouted after the fire. IHSS 700-150.2 (S) is part of IHSS Group 700-3 and is being investigated in accordance with IASAP Addendum #IA-03-04 (DOE 2003f). Any necessary soil remediation will be conducted in accordance with RSOP Notification #04-04 (DOE 2004g). Because of the potential for the storm sewer to contain plutonium-contaminated sediment, possibly at a concentration that exceeds the WRW AL, the storm sewer will be removed. Building 776-777 will be demolished in FY05 in accordance with the Building 776/777 Closure Project DOP (DOE 1999b). Pursuant to the DOP, the storm drain and enclosed sediment will be removed, characterized as necessary for disposal, and disposed off Site.

POTENTIAL CONTAMINATION IN SOIL/SEDIMENT AT OTHER STORM DRAINS

Although the identification of storm drains as a PAC is a result of the reported releases discussed above, PAC 000-505 does encompass other storm drains. Accordingly, sediment, surface soil, and subsurface soil data not associated with the specific release areas have been examined to further evaluate the appropriateness of NFAA for this PAC. These data have been collected as part of historical investigations within the Industrial Area or for other IHSS Group characterizations/remediations. The sample locations are near the inlet and outlet of storm drains or beneath the invert elevations of the storm drains (subsurface soil) because the data at these locations will be most representative of potential contaminant releases from the storm drain system.

The data for the evaluation was identified as follows:

1. Using a Geographic Information System, all sample location codes for surface soil and sediment samples that were collected within 5 feet of the inlet or outlet of a storm drain were identified. Sample location codes for subsurface soil samples collected anywhere within 5 feet of a storm drain line were also identified.
2. Samples from within the IHSSs (contaminant release areas) noted in the previous section were then eliminated from further evaluation.
3. Storm drain depths were compared to subsurface soil sample depths, and all subsurface soil samples with end depths above the invert depths of the storm

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drains[6] were eliminated from further evaluation because they were unlikely to be representative of soil potentially impacted by a storm drain release.

4. All samples considered no longer representative (NLR) [soil removed during prior accelerated action remedial activities] or being specifically used to evaluate the need for an IHSS Group accelerated action soil removal were eliminated from further evaluation.
5. Data for all remaining samples were extracted from the Soil Water Database (SWD).

Figure 2 shows all sample locations where data has been retained for evaluation in accordance with the above noted criteria. Figure 2 also shows the IHSSs where contaminant releases to storm drains have already been dispositioned or will be dispositioned as discussed in the previous section. Figure 3 shows the sample locations that were eliminated by applying criterion 4 above. The rationale for the elimination of these data for this NFAA evaluation is as follows:

Sample Location Codes	Rationale for Elimination
Surface Soil	
CH47-000, CH47-001	NLR from previous OPWL soil removal conducted at Tank 207 in accordance with Notification #03-14 for IHSS Group 000-2 (DOE 2003g) (Closeout Report pending)
01595, 01495, SS000295, SS000495, SS000595, SS000695	NLR from IHSS Group 400-8 soil removal (DOE 2004h)
Sediment	
SED124, 10499	Sediment was recently removed as part of IHSS Group 700-11 accelerated action (Notification #IA-04-10) (DOE 2004i), which was approved by CDPHE (CDPHE 2004e)
Subsurface Soil	
CQ40-000 (4.5' – 6.5')	Data collected in accordance with BZSAP Addendum #BZ-02-01 for IHSS Group 900-2 (DOE 2002), and currently under evaluation
CH47-001 (3.5' – 4.5')	NLR from previous OPWL soil removal conducted at Tank 207 as noted above

[6] Since 2001, when the first RFETS Storm Water Pollution Prevention Plan (SWPPP) was certified by the Site in accordance with the RFETS' NPDES Permit requirements, an annual Comprehensive Site Compliance Evaluation (CSCE) inspection has been performed for the storm drains. Through the conduct of annual CSCEs, a Storm Water Culvert and Infrastructure database has been prepared, which was used to identify storm drain depths, where available. The average depth of 3.9 feet for culverts with known depths was used as the estimated depth for culverts with unknown depths.

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The analytical program for all retained sample location codes is summarized in Table 3. As can be seen, sediment, surface soil, and subsurface soil samples were analyzed for metals, radionuclides, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs). All analytical groups are well represented in each medium.

Tables 4, 5, and 6 summarize the sediment, surface soil, and subsurface soil data, respectively. These tables show analytes that were detected above background. Background levels for inorganic constituents in surface soil are from the Geochemical Characterization of Background Surface Soils: Background Soils Characterization Program (DOE 1995). Background levels for inorganic constituents in sediment and subsurface soil are from the Background Geochemical Characterization Report (DOE 1993). All background values used for comparison are the mean background value plus two standard deviations. Any detection of an organic compound is considered an above background level observation. The following decision rules were applied to the calculation of the summary statistics provided in Tables 4, 5, and 6:

1. Data rejected during validation and replicates were eliminated from the data set before computing statistics.
2. The maximum value is the highest detected value observed.
3. The average was computed using only data that are above background concentrations.

Figures 4, 5, and 6 show all sediment, surface soil, and subsurface soil data for analytes that were detected above background.

Sediment Assessment

As shown in Table 4 and Figure 4a and 4b, metals and to a lesser extent radionuclides and polynuclear aromatic hydrocarbons (PAHs) are above background in the sediments. However, metal and radionuclide concentrations are generally near background levels, and are always well below the WRW ALs. PAHs in the sediments are not unusual because the Industrial Area is largely paved with asphalt which contains high concentrations of PAHs. PAHs would be expected in runoff, and thus, in the sediments. Nevertheless, concentrations are low relative to the WRW ALs.

Surface Soil Assessment

As shown in Table 5 and Figure 5a and 5b, metals, radionuclides and PAHs are above background in surface soil. However, like sediment, metal and radionuclide concentrations are generally near background levels, and are always well below the WRW ALs. PAHs in the sediments are also well below WRW ALs. In contrast, Aroclor 1260 is present at 54,000 ug/kg at sample location PCB 9-2, which exceeds the WRW AL of 12,400 ug/kg. However, this is the contamination in the storm drain sump at IHSS Group 400-3 (Contaminant Release Area #6). As previously discussed, this storm drain and its contents will be removed during D&D of the Building 440 complex.

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Application of the Subsurface Soil Risk Screen

As shown in Table 6 and Figures 6a through 6d, metals, radionuclides and occasionally VOCs, SVOCs, and PCBs are above background in subsurface soil. The subsurface soil risk screen (RFCA Attachement 5) has been applied to these data.

Screen 1 – Are Contaminant of Concern (COC) Concentrations Below Table 3 Wildlife Refuge Worker (WRW) Soil Action Levels?

No. Arsenic at CJ48-004 (Figure 6a), arsenic at CP45-000 (Figure 6c), and chromium at 41896 (Figure 4d) are at concentrations above their WRW ALs. Concentrations are all within a factor of 2 of the WRW ALs.

Screen 2 – Is there potential for subsurface soil to become surface soil?

No. The locations where arsenic and chromium exceed the WRW ALs are not in areas prone to landslides as shown in Figure 1 of RFCA Attachment 5.

Screen 3 – Does subsurface soil radiological contamination exceed criteria in Section 5.3 and Attachment 14?

No. Concentrations of radionuclides are not above WRW ALs.

Screen 4 – Is there an environmental pathway and sufficient quantity of COC that would cause exceedance of surface water standards (SWS)?

No. Contaminant migration via erosion and groundwater are the two possible pathways whereby surface water could become contaminated from PAC 000-505 releases.

Erosion

The specific contaminant release areas have been remediated through accelerated action, otherwise determined to be NFAA, or will be dispositioned through D&D actions. The contamination outside of these specific contaminant release areas is at relatively low levels. The data do not suggest the storm sewers are a source of contamination, but rather, reflect deposition of contaminants from other sources within the IA resulting from runoff entering the drains. Contamination in runoff is potentially increased by soil disturbance activities from within the IA, in particular D&D activities. However, pursuant to the RFETS Storm Water Pollution Prevention Plan, the Site uses erosion control measures to protect watershed resources and water quality. Temporary sediment control practices implemented at the Site include linear sediment barriers (such as silt fencing, sandbag barriers, or straw bale barriers), and providing fiber rolls (wattles), gravel bag berms, or check dams to break up slope length or flow. For long-term sediment control, the Site uses soil stabilization measures to reduce sediment transport from exposed soil surfaces. Areas of soil that are left exposed after demolition are graded and then revegetated with native grasses in accordance with the RFETS Revegetation

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Plan (K-H 2004). A hydromulch is then applied to the seeded soil to temporarily prevent soil movement before a vegetative cover can be established. Straw-coconut mats are also applied on slopes to reduce erosion. The rugged coconut fiber increases longevity of the product, but the product is designed to photo- and bio-degrade over time.

Many storm drains will be removed as part of the IA land re-configuration. Others will be capped or plugged and remain in place. Earthwork will be required where storm drains are removed to either fill in disturbed areas to achieve existing grade or to grade the area and establish a functional channel (DOE 2004i). During removal of the storm drains, erosion control measures will be utilized to protect water quality. Those areas that as a result of grade, soil type, proximity to waterways, or recognized presence of radiological or hazardous substances, offer the greatest potential for soil loss and downgradient water quality impacts, and will be afforded special erosion control considerations. The Environmental Assessment for Pond and Land Configuration indicates a Finding of No Significant Impact from the configuration activities, including the removal of storm drains (DOE 2004j).

Groundwater

Groundwater throughout most of the IA is contaminated, primarily with VOCs. The low level contamination in subsurface soil near the storm drains does not suggest that the drains are a source for groundwater contamination. The need for and extent of any groundwater remediation in the IA is being addressed by the Groundwater Interim Measure/Interim Remedial Action (IM/IRA).

Action/No Further Accelerated Action Recommendation

PAC 000-505 is proposed for NFAA. There are eight specific contaminant-release areas cited in the description of PAC 000-505. These areas have been or will be characterized/ remediated through the IASAP, ER RSOP, or D&D activities. Sediment and surface soil analyte concentrations elsewhere along the storm drain network are at concentrations well below the WRW ALs. The SSRS does not indicate that contaminated subsurface soil should be removed for the protection of human health and water quality. As part of the final pond and land configuration, most storm drains will be removed, a few will be retained and plugged, and even fewer will be retained and remain operational (DOE 2004i). The proposed storm drain disposition is shown on Figure 7. The storm drain disposition has been approved by the regulatory agencies. Erosion control measures will be applied as appropriate during these activities. Ecological effects will be evaluated in the Accelerated Action Ecological Screening Evaluation and the ecological portion of the Sitewide Comprehensive Risk Assessment.

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Table 3 PAC 000-505 Analytical Summary

Surface Soil			Sediment			Subsurface Soil				
Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Start Depth	End Depth	Analyte Group
3495	2/27/1995	Metal	CN41-000	6/3/2003	Metal	1495	3/7/1995	2	6	Metal
3495	2/27/1995	Rads	CN41-000	6/3/2003	Rads	1495	3/7/1995	2	6	PCB
3495	2/27/1995	SVOC	PCB-31-13	5/9/1991	PCB	1495	3/7/1995	2	6	Pesticide
3495	2/27/1995	VOC	PCB-31-16	5/9/1991	PCB	1495	3/7/1995	2	6	Rads
BW36-031	1/20/2004	Metal	SED0010101	1/23/2001	Metal	1495	3/7/1995	2	6	SVOC
BW36-031	1/20/2004	Rads	SED0010101	1/23/2001	Rads	1495	3/7/1995	2	6	VOC
BW36-033	1/21/2004	Metal	SED0010101	1/23/2001	VOC	1495	3/7/1995	8	15	Metal
BW36-033	1/21/2004	Rads	SED0020101	1/23/2001	Metal	1495	3/7/1995	8	15	Rads
BW42-005	9/5/2002	Metal	SED0020101	1/23/2001	Rads	1595	3/2/1995	2	5	Metal
BW42-005	9/5/2002	Rads	SED0020101	1/23/2001	VOC	1595	3/2/1995	2	5	PCB
BY45-006	2/20/2003	Metal	SED0030400	6/20/2000	Rads	1595	3/2/1995	2	5	Pesticide
BY45-006	2/20/2003	Rads	SED0050400	6/20/2000	Rads	1595	3/2/1995	2	5	Rads
BY45-006	2/20/2003	SVOC	SED0070400	6/20/2000	Rads	1595	3/2/1995	2	5	SVOC
BY45-006	2/20/2003	VOC	SED0140400	6/20/2000	Rads	1595	3/2/1995	2	5	VOC
BZ42-003	8/13/2002	Metal	SED06995	3/3/1995	Metal	1595	3/3/1995	12	13	VOC
BZ42-003	8/13/2002	PCB	SED06995	3/3/1995	PCB	1695	3/2/1995	2	4	Metal
BZ42-003	8/13/2002	Rads	SED06995	3/3/1995	Pesticide	1695	3/2/1995	2	4	PCB
BZ42-003	8/13/2002	SVOC	SED06995	3/3/1995	Rads	1695	3/2/1995	2	4	Pesticide
BZ42-003	8/13/2002	VOC	SED06995	3/3/1995	SVOC	1695	3/2/1995	2	4	Rads
CE46-017	4/28/2004	Rads	SED06995	3/3/1995	VOC	1695	3/2/1995	2	4	SVOC
CE48-023	2/13/2003	Rads	SED06995	3/3/1995	WQP	1695	3/2/1995	2	4	VOC
CF44-004	7/8/2004	Rads	SED117	11/28/1990	Metal	2491	11/6/1991	11.9	12.1	VOC
CG47-013	4/19/2004	Metal	SED117	11/28/1990	PCB	3495	3/23/1995	2.4	6	Metal
CG47-013	4/19/2004	Rads	SED117	11/28/1990	Pesticide	3495	3/23/1995	2.4	6	SVOC
CG47-013	4/19/2004	SVOC	SED117	11/28/1990	Rads	3495	3/23/1995	2.4	6	VOC
CG47-013	4/19/2004	VOC	SED117	11/28/1990	SVOC	3495	3/23/1995	6	8	Metal
CG47-016	4/20/2004	Metal	SED117	11/28/1990	VOC	3495	3/23/1995	6	8	SVOC
CG47-016	4/20/2004	Rads	SED117	11/28/1990	WQP	3495	3/23/1995	6	8	VOC
CG47-016	4/20/2004	SVOC	SED117	3/27/1991	Metal	3495	3/23/1995	8	10	Metal
CG47-016	4/20/2004	VOC	SED117	3/27/1991	PCB	3495	3/23/1995	8	10	VOC
CG48-029	6/8/2004	PCB	SED117	3/27/1991	Pesticide	14395	5/19/1995	4	6	Metal
CH49-004	1/21/2003	Metal	SED117	3/27/1991	Rads	14395	5/19/1995	4	6	PCB
CH49-004	1/21/2003	PCB	SED117	3/27/1991	SVOC	14395	5/19/1995	4	6	Pesticide
CH49-004	1/21/2003	Rads	SED117	3/27/1991	VOC	14395	5/19/1995	4	6	Rads
CH49-004	1/21/2003	SVOC	SED117	5/14/1991	Metal	14395	5/19/1995	4	6	SVOC
CH49-004	1/21/2003	VOC	SED117	5/14/1991	PCB	14395	5/19/1995	4	6	VOC
CI45-014	1/7/2004	Metal	SED117	5/14/1991	Pesticide	14395	5/19/1995	15.7	16	VOC
CI45-014	1/7/2004	Rads	SED117	5/14/1991	Rads	41898	5/18/1998	0	6	Metal
CJ45-017	1/8/2004	Metal	SED117	5/14/1991	SVOC	41898	5/18/1998	0	6	Rads
CJ45-017	1/8/2004	Rads	SED117	5/14/1991	VOC	41898	5/18/1998	0	6	VOC

Surface Soil			Sediment			Subsurface Soil				
Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Start Depth	End Depth	Analyte Group
CP40-001	6/26/2002	Metal	SED117	8/13/1991	Metal	BV38-004	12/19/2003	12.5	15.5	Metal
CP40-001	6/26/2002	PCB	SED117	8/13/1991	PCB	BV38-004	12/19/2003	12.5	15.5	SVOC
CP40-001	6/26/2002	Pesticide	SED117	8/13/1991	Pesticide	BV38-004	12/19/2003	12.5	15.5	VOC
CP40-001	6/26/2002	Rads	SED117	8/13/1991	Rads	BV38-004	12/19/2003	12.5	15.5	WQP
CP40-001	6/26/2002	SVOC	SED117	8/13/1991	SVOC	BV38-013	12/19/2003	2.5	4.5	Metal
CP40-001	6/26/2002	VOC	SED117	8/13/1991	VOC	BV38-013	12/19/2003	2.5	4.5	Rads
CQ40-000	5/22/2002	Metal	SED117	12/4/1991	Metal	BV38-013	12/19/2003	2.5	4.5	SVOC
CQ40-000	5/22/2002	PCB	SED117	12/4/1991	PCB	BV38-013	12/19/2003	2.5	4.5	VOC
CQ40-000	5/22/2002	Pesticide	SED117	12/4/1991	Pesticide	BW36-009	7/17/2003	1.3	3.3	Metal
CQ40-000	5/22/2002	SVOC	SED117	12/4/1991	Rads	BW36-009	7/17/2003	1.3	3.3	Rads
CQ40-000	5/22/2002	VOC	SED117	12/4/1991	SVOC	BW36-009	7/17/2003	1.3	3.3	VOC
PCB-31-5	5/9/1991	PCB	SED117	12/4/1991	VOC	BW36-033	1/21/2004	0.5	2.5	Metal
PCB-9-2	6/28/1991	PCB	SED117	2/27/1992	Metal	BW36-033	1/21/2004	0.5	2.5	Rads
PCB-9-2	6/28/1991	Rads	SED117	2/27/1992	PCB	BW36-033	1/21/2004	0.5	2.5	VOC
SS014093	7/27/1994	Metal	SED117	2/27/1992	Pesticide	BW36-039	1/21/2004	0.5	2.5	Metal
SS014093	7/27/1994	WQP	SED117	2/27/1992	Rads	BW36-039	1/21/2004	0.5	2.5	Rads
SS302093	6/8/1994	Metal	SED117	2/27/1992	SVOC	BW36-039	1/21/2004	0.5	2.5	VOC
SS302093	6/8/1994	Rads	SED117	2/27/1992	VOC	BW38-001	5/19/2003	2.5	4.5	Metal
SS402393	12/30/1992	Metal	SED118	9/18/1990	Metal	BW38-001	5/19/2003	2.5	4.5	PCB
SS402393	12/30/1992	PCB	SED118	9/18/1990	PCB	BW38-001	5/19/2003	2.5	4.5	Rads
SS402393	12/30/1992	Pesticide	SED118	9/18/1990	Pesticide	BW38-001	5/19/2003	2.5	4.5	SVOC
SS402393	12/30/1992	Rads	SED118	9/18/1990	Rads	BW38-001	5/19/2003	2.5	4.5	VOC
SS402393	12/30/1992	SVOC	SED118	9/18/1990	SVOC	BW38-001	5/19/2003	4.5	6.5	Metal
SS402393	12/30/1992	VOC	SED118	9/18/1990	VOC	BW38-001	5/19/2003	4.5	6.5	PCB
SS403493	5/17/1993	Metal	SED118	11/28/1990	Metal	BW38-001	5/19/2003	4.5	6.5	Rads
SS403493	5/17/1993	PCB	SED118	11/28/1990	PCB	BW38-001	5/19/2003	4.5	6.5	SVOC
SS403493	5/17/1993	Pesticide	SED118	11/28/1990	Pesticide	BW38-001	5/19/2003	4.5	6.5	VOC
SS403493	5/17/1993	Rads	SED118	11/28/1990	Rads	BW38-001	5/19/2003	4.5	6.5	WQP
SS403493	5/17/1993	SVOC	SED118	11/28/1990	SVOC	BW38-001	5/19/2003	6.5	8.5	Metal
SS403493	5/17/1993	VOC	SED118	11/28/1990	VOC	BW38-001	5/19/2003	6.5	8.5	PCB
SS431094	11/14/1994	Metal	SED118	11/28/1990	WQP	BW38-001	5/19/2003	6.5	8.5	Rads
SS431094	11/14/1994	Rads	SED118	3/27/1991	Metal	BW38-001	5/19/2003	6.5	8.5	SVOC

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Surface Soil			Sediment			Subsurface Soil				
Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Start Depth	End Depth	Analyte Group
SS431094	11/14/1994	SVOC	SED118	3/27/1991	PCB	BW38-001	5/19/2003	6.5	8.5	VOC
SS431094	11/14/1994	VOC	SED118	3/27/1991	Pesticide	BW38-001	5/19/2003	6.5	8.5	WQP
SS432694	11/14/1994	Metal	SED118	3/27/1991	Rads	BX38-007	7/30/2003	3.5	4	Metal
SS432694	11/14/1994	Rads	SED118	3/27/1991	SVOC	BX38-007	7/30/2003	3.5	4	Rads
SS432694	11/14/1994	SVOC	SED118	3/27/1991	VOC	BX38-007	7/30/2003	3.5	4	SVOC
SS432694	11/14/1994	VOC	SED118	5/21/1991	Metal	BX38-007	7/30/2003	3.5	4	VOC
SS460294	10/25/1994	Rads	SED118	5/21/1991	PCB	CB42-001	2/27/2004	4.8	6.8	VOC
SS609992	10/7/1992	Metal	SED118	5/21/1991	Pesticide	CB42-001	2/27/2004	6.8	8.8	VOC
SS609992	10/7/1992	PCB	SED118	5/21/1991	Rads	CB42-001	2/27/2004	8.8	10.8	VOC
SS609992	10/7/1992	Pesticide	SED118	5/21/1991	SVOC	CB42-014	5/13/2004	2.5	4.5	VOC
SS609992	10/7/1992	Rads	SED118	5/21/1991	VOC	CB42-014	5/13/2004	4.5	6.5	VOC
SS611292	10/8/1992	Metal	SED118	8/13/1991	Metal	CC42-004	5/18/2004	2.5	4.5	VOC
SS611292	10/8/1992	PCB	SED118	8/13/1991	PCB	CC42-004	5/18/2004	4.5	6.5	VOC
SS611292	10/8/1992	Pesticide	SED118	8/13/1991	Pesticide	CC42-009	5/18/2004	2.5	4.5	VOC
SS611292	10/8/1992	Rads	SED118	8/13/1991	Rads	CC42-009	5/18/2004	4.5	6.5	VOC
SS611292	10/8/1992	WQP	SED118	8/13/1991	SVOC	CC43-018	11/18/2003	2.5	4.5	Metal
SS613392	9/29/1992	Metal	SED118	8/13/1991	VOC	CC43-018	11/18/2003	2.5	4.5	PCB
SS613392	9/29/1992	PCB	SED118	12/4/1991	Metal	CC43-018	11/18/2003	2.5	4.5	Rads
SS613392	9/29/1992	Pesticide	SED118	12/4/1991	PCB	CC43-018	11/18/2003	2.5	4.5	VOC
SS613392	9/29/1992	WQP	SED118	12/4/1991	Pesticide	CC43-018	11/18/2003	4.5	6.5	Metal
SS800993	12/1/1994	Metal	SED118	12/4/1991	Rads	CC43-018	11/18/2003	4.5	6.5	PCB
SS800993	12/1/1994	Rads	SED118	12/4/1991	SVOC	CC43-018	11/18/2003	4.5	6.5	Rads
SS800993	12/1/1994	SVOC	SED118	12/4/1991	VOC	CC43-018	11/18/2003	4.5	6.5	VOC
SS800993	12/1/1994	VOC	SED118	2/27/1992	Metal	CC43-022	11/18/2003	2.5	4.5	Metal
SS800993	12/1/1994	WQP	SED118	2/27/1992	PCB	CC43-022	11/18/2003	2.5	4.5	PCB
SS801693	10/27/1994	Metal	SED118	2/27/1992	Pesticide	CC43-022	11/18/2003	2.5	4.5	Rads
SS801693	10/27/1994	Rads	SED118	2/27/1992	Rads	CC43-022	11/18/2003	2.5	4.5	VOC
SS801693	10/27/1994	SVOC	SED118	2/27/1992	SVOC	CC43-022	11/18/2003	4.5	6.5	Metal
SS801693	10/27/1994	VOC	SED118	2/27/1992	VOC	CC43-022	11/18/2003	4.5	6.5	PCB
			SED20193	5/31/1994	Metal	CC43-022	11/18/2003	4.5	6.5	Rads
			SED20193	5/31/1994	PCB	CC43-022	11/18/2003	4.5	6.5	VOC
			SED20193	5/31/1994	Rads	CE44-002	7/6/2004	0.5	2.5	PCB

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Surface Soil			Sediment			Subsurface Soil				
Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Start Depth	End Depth	Analyte Group
			SED20193	5/31/1994	VOC	CE44-002	7/6/2004	0.5	2.5	Rads
			SED20293	5/31/1994	Metal	CE44-002	7/6/2004	0.5	2.5	VOC
			SED20293	5/31/1994	PCB	CE45-000	6/22/2004	0.5	2.5	PCB
			SED20293	5/31/1994	Rads	CE45-000	6/22/2004	0.5	2.5	Rads
			SED20793	4/7/1994	Metal	CE45-000	6/22/2004	0.5	2.5	VOC
			SED20793	4/7/1994	PCB	CE45-006	7/12/2004	0.5	2.5	PCB
			SED20793	4/7/1994	Pesticide	CE45-006	7/12/2004	0.5	2.5	Rads
			SED20793	4/7/1994	Rads	CE45-006	7/12/2004	0.5	2.5	VOC
			SED20793	4/7/1994	VOC	CE45-008	6/30/2004	0.5	2.5	PCB
			SED21293	4/11/1994	Metal	CE45-008	6/30/2004	0.5	2.5	Rads
			SED21293	4/11/1994	PCB	CE45-008	6/30/2004	0.5	2.5	VOC
			SED21293	4/11/1994	Pesticide	CF41-000	7/22/2004	2.5	4.5	VOC
			SED21293	4/11/1994	Rads	CF41-004	7/21/2004	2.5	4.5	VOC
			SED21293	4/11/1994	VOC	CF41-005	7/21/2004	2.5	4.5	VOC
			SED21593	4/5/1994	Metal	CG44-009	4/22/2004	2.5	4.5	Metal
			SED21593	4/5/1994	PCB	CG44-009	4/22/2004	2.5	4.5	Rads
			SED21593	4/5/1994	Pesticide	CG44-009	4/22/2004	2.5	4.5	SVOC
			SED21593	4/5/1994	Rads	CG44-009	4/22/2004	2.5	4.5	VOC
			SED21593	4/5/1994	VOC	CG44-009	4/22/2004	4.5	6.5	Metal
			SED42800	10/11/2000	Rads	CG44-009	4/22/2004	4.5	6.5	Rads
			SED65992	2/17/1993	Metal	CG44-009	4/22/2004	4.5	6.5	SVOC
			SED65992	2/17/1993	PCB	CG44-009	4/22/2004	4.5	6.5	VOC
			SED65992	2/17/1993	Pesticide	CG47-036	1/27/2004	3.5	4	Metal
			SED65992	2/17/1993	Rads	CG47-036	1/27/2004	3.5	4	Rads
			SED65992	2/17/1993	SVOC	CG47-036	1/27/2004	3.5	4	VOC
			SED65992	2/17/1993	VOC	CH47-000	9/22/2003	3	4.5	Metal
			SED65992	2/17/1993	WQP	CH47-000	9/22/2003	3	4.5	Rads
			SED69692	5/10/1993	Metal	CH47-000	9/22/2003	3	4.5	VOC
			SED69692	5/10/1993	PCB	CH47-000	9/22/2003	5	6.5	Metal
			SED69692	5/10/1993	Pesticide	CH47-000	9/22/2003	5	6.5	Rads
			SED69692	5/10/1993	Rads	CH47-000	9/22/2003	5	6.5	VOC
			SED69692	5/10/1993	SVOC	CH47-000	9/22/2003	7	8.5	Metal

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Surface Soil			Sediment			Subsurface Soil				
Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Start Depth	End Depth	Analyte Group
			SED69692	5/10/1993	VOC	CH47-000	9/22/2003	7	8.5	Rads
			SED69892	5/10/1993	Metal	CH47-000	9/22/2003	7	8.5	VOC
			SED69892	5/10/1993	PCB	CH48-000	8/26/2002	4.5	6.5	Metal
			SED69892	5/10/1993	Pesticide	CH48-000	8/26/2002	4.5	6.5	Rads
			SED69892	5/10/1993	Rads	CH48-000	8/26/2002	4.5	6.5	WQP
			SED69892	5/10/1993	SVOC	CH48-003	2/25/2003	4.5	6.5	Metal
			SED69892	5/10/1993	VOC	CH48-003	2/25/2003	4.5	6.5	Rads
			SED750501	1/25/2001	Metal	CH48-003	2/25/2003	4.5	6.5	WQP
			SED750501	1/25/2001	Rads	CH48-016	8/26/2002	4.5	6.5	Metal
			SED750501	1/25/2001	VOC	CH48-016	8/26/2002	4.5	6.5	Rads
			SED80093	12/12/1994	Metal	CH48-016	8/26/2002	4.5	6.5	WQP
			SED80093	12/12/1994	Rads	CH48-020	1/23/2003	4.5	6.5	Metal
			SED80093	12/12/1994	SVOC	CH48-020	1/23/2003	4.5	6.5	Rads
			SED80093	12/12/1994	VOC	CH48-020	1/23/2003	4.5	6.5	WQP
			SED80193	12/12/1994	Metal	CH48-021	1/23/2003	4.5	6.5	Metal
			SED80193	12/12/1994	Rads	CH48-021	1/23/2003	4.5	6.5	Rads
			SED80193	12/12/1994	SVOC	CH48-021	1/23/2003	4.5	6.5	WQP
			SED80193	12/12/1994	VOC	CH48-051	12/29/2003	2.5	4.5	Rads
			SS401793	12/31/1992	Metal	CI46-037	12/31/2003	2.5	3	Rads
			SS401793	12/31/1992	PCB	CI46-038	12/31/2003	2.5	3	Rads
			SS401793	12/31/1992	Pesticide	CI48-039	12/23/2003	3.5	4	Rads
			SS401793	12/31/1992	Rads	CJ45-010	2/23/2004	2.5	4.5	Metal
			SS401793	12/31/1992	SVOC	CJ45-010	2/23/2004	2.5	4.5	Rads
			SS401793	12/31/1992	VOC	CJ45-010	2/23/2004	2.5	4.5	VOC
			SS441494	9/7/1994	Metal	CJ45-010	2/23/2004	4.5	6.5	Metal
			SS441494	9/7/1994	Rads	CJ45-010	2/23/2004	4.5	6.5	Rads
						CJ45-010	2/23/2004	4.5	6.5	VOC
						CJ46-011	2/23/2004	2.5	4.5	Metal
						CJ46-011	2/23/2004	2.5	4.5	Rads
						CJ46-011	2/23/2004	2.5	4.5	VOC
						CJ46-011	2/23/2004	4.5	6.5	Metal
						CJ46-011	2/23/2004	4.5	6.5	Rads

Surface Soil			Sediment			Subsurface Soil				
Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Start Depth	End Depth	Analyte Group
						CJ46-011	2/23/2004	4.5	6.5	VOC
						CJ46-018	1/12/2004	2.5	4.5	Metal
						CJ46-018	1/12/2004	2.5	4.5	Rads
						CJ46-018	1/12/2004	2.5	4.5	VOC
						CJ46-018	1/12/2004	4.5	6.5	Metal
						CJ46-018	1/12/2004	4.5	6.5	Rads
						CJ46-018	1/12/2004	4.5	6.5	VOC
						CJ46-018	1/12/2004	6.5	8.5	Metal
						CJ46-018	1/12/2004	6.5	8.5	Rads
						CJ46-018	1/12/2004	6.5	8.5	VOC
						CJ46-018	1/12/2004	8.5	10.5	Metal
						CJ46-018	1/12/2004	8.5	10.5	Rads
						CJ46-018	1/12/2004	8.5	10.5	VOC
						CJ46-021	1/13/2004	2.5	4.5	Metal
						CJ46-021	1/13/2004	2.5	4.5	Rads
						CJ46-021	1/13/2004	2.5	4.5	VOC
						CJ46-021	1/13/2004	4.5	6.5	Metal
						CJ46-021	1/13/2004	4.5	6.5	Rads
						CJ46-021	1/13/2004	4.5	6.5	VOC
						CJ46-021	1/13/2004	6.5	8.5	Metal
						CJ46-021	1/13/2004	6.5	8.5	Rads
						CJ46-021	1/13/2004	6.5	8.5	VOC
						CJ46-021	1/13/2004	8.5	10.5	Metal
						CJ46-021	1/13/2004	8.5	10.5	Rads
						CJ46-021	1/13/2004	8.5	10.5	VOC
						CJ48-004	8/26/2002	0	6	Metal
						CJ48-004	8/26/2002	0	6	Rads
						CJ48-041	12/23/2003	2.5	3	Rads
						CM43-000	5/29/2003	2.5	4.5	Metal
						CM43-000	5/29/2003	2.5	4.5	Rads
						CM43-000	5/29/2003	2.5	4.5	VOC
						CO43-001	4/2/2003	2.5	4.5	Metal

Surface Soil			Sediment			Subsurface Soil				
Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Analyte Group	Location Code	Collection Date	Start Depth	End Depth	Analyte Group
						CO43-001	4/2/2003	2.5	4.5	Rads
						CO43-001	4/2/2003	2.5	4.5	VOC
						CP40-001	6/26/2002	2.5	4.5	Metal
						CP40-001	6/26/2002	2.5	4.5	PCB
						CP40-001	6/26/2002	2.5	4.5	Pesticide
						CP40-001	6/26/2002	2.5	4.5	Rads
						CP40-001	6/26/2002	2.5	4.5	SVOC
						CP40-001	6/26/2002	2.5	4.5	VOC
						CP40-001	6/26/2002	4.5	6.5	Metal
						CP40-001	6/26/2002	4.5	6.5	PCB
						CP40-001	6/26/2002	4.5	6.5	Pesticide
						CP40-001	6/26/2002	4.5	6.5	Rads
						CP40-001	6/26/2002	4.5	6.5	SVOC
						CP40-001	6/26/2002	4.5	6.5	VOC
						CP45-000	10/22/2002	0	5	Metal
						CP45-000	10/22/2002	0	5	Rads
						CP45-000	10/22/2002	0	5	VOC
						CP45-000	11/18/2002	5	9	Metal
						CP45-000	11/18/2002	5	9	Rads
						CP45-000	11/18/2002	9.5	10	VOC
						CP45-000	11/18/2002	10	14.5	Metal
						CP45-000	11/18/2002	10	14.5	Rads
						CQ41-004	8/20/2002	2.5	4.5	PCB
						CQ41-004	8/20/2002	2.5	4.5	VOC
						CQ41-004	8/20/2002	4.5	6.5	PCB
						CQ41-004	8/20/2002	4.5	6.5	VOC
						CQ41-004	8/20/2002	6.5	8.5	PCB
						CR44-000	9/8/2003	8.5	10.5	Metal
						CR44-000	9/8/2003	8.5	10.5	Rads
						CR44-000	9/8/2003	8.5	10.5	VOC

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Table 4 Summary of Constituents Above Background in Sediment

Analyte Group	Analyte	Total Number Samples Analyzed	Number of Samples above BG but below the AL	Number of Samples above the AL	Average Conc.	Maximum Conc.	BG Mean Plus 2SD	Wildlife Refuge Worker AL	Unit
Metal	Aluminum	31	4	0	18925	23700	15713	228000	mg/kg
Metal	Antimony	30	3	0	17.8	26.3	13.01	409	mg/kg
Metal	Arsenic	31	4	0	9.425	10.7	7.24	22.2	mg/kg
Metal	Barium	31	1	0	805	805	188	26400	mg/kg
Metal	Cadmium	31	2	0	1.95	2	1.88	962	mg/kg
Metal	Chromium	32	2	0	33.95	36.2	23.23	268	mg/kg
Metal	Cobalt	31	2	0	14.8	15	12.3	1550	mg/kg
Metal	Copper	31	4	0	71.7	167	27.27	40900	mg/kg
Metal	Iron	31	5	0	25840	36900	21379	307000	mg/kg
Metal	Lead	31	1	0	131	131	95.6	1000	mg/kg
Metal	Mercury	28	1	0	0.5	0.5	0.34	25200	mg/kg
Metal	Nickel	31	6	0	24.0	38.9	17.89	20400	mg/kg
Metal	Silver	31	2	0	2.3	2.3	2.28	5110	mg/kg
Metal	Vanadium	31	1	0	142	142	46.83	7150	mg/kg
Metal	Zinc	31	13	0	267	728	104.4	307000	mg/kg
PCB	Aroclor-1254	29	5	0	6780	11900	-	12400	ug/kg
Radionuclide	Americium-241	30	5	0	0.965	1.39	0.27	76	pCi/g
Radionuclide	Plutonium-239/240	34	2	0	2	2	1.35	50	pCi/g
Radionuclide	Uranium-234	28	1	0	4.13	4.13	3.98	300	pCi/g
Radionuclide	Uranium-235	28	3	0	0.206	0.210	0.15	8	pCi/g
Radionuclide	Uranium-238	28	4	0	6.06	10.13	3.46	351	pCi/g
SVOC	Anthracene	20	1	0	970	970	-	204000000	ug/kg
SVOC	Benzo(a)anthracene	20	3	0	980	1400	-	34900	ug/kg
SVOC	Benzo(a)pyrene	20	1	0	1300	1300	-	3490	ug/kg
SVOC	Benzo(b)fluoranthene	20	3	0	1000	1500	-	34900	ug/kg
SVOC	Benzo(k)fluoranthene	20	3	0	870	1100	-	349000	ug/kg
SVOC	bis(2-Ethylhexyl)phthalate	20	1	0	1500	1500	-	1970000	ug/kg
SVOC	Chrysene	20	2	0	1140	1500	-	3490000	ug/kg
SVOC	Fluoranthene	20	7	0	1406	3100	-	27200000	ug/kg
SVOC	Pyrene	20	7	0	1570	3900	-	22100000	ug/kg
VOC	Acetone	25	2	0	150	180	-	102000000	ug/kg
VOC	Methylene chloride	27	5	0	38.2	110	-	2530000	ug/kg
VOC	Toluene	27	2	0	76	140	-	31300000	ug/kg

Exceeds Wildlife Refuge Worker Action Level

Note: Analytes shown are those that were detected at least once above background levels and have a Wildlife Refuge Worker Action Level. The maximum concentration is the maximum detected value, and the average concentration is the average of the data that exceed background.
AL - Action Level
BG – Background
SD – Standard Deviation

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Table 5 Summary of Constituents Above Background in Surface Soil

Analyte Group	Analyte	Total Number Samples Analyzed	Number of Samples above BG but below the AL	Number of Samples above the AL	Average Conc.	Maximum Conc.	BG Mean Plus 2SD	Wildlife Refuge Worker AL	Unit
Metal	Aluminum	20	3	0	22333	27000	16902	228000	mg/kg
Metal	Antimony	24	7	0	4.84	14.3	0.47	409	mg/kg
Metal	Arsenic	24	2	0	10.95	11	10.1	22.2	mg/kg
Metal	Barium	24	6	0	545.50	772	141	26400	mg/kg
Metal	Beryllium	20	1	0	1.10	1.1	0.966	921	mg/kg
Metal	Cadmium	24	1	0	2.20	2.2	1.61	962	mg/kg
Metal	Chromium	25	9	0	42.18	74.6	16.99	268	mg/kg
Metal	Cobalt	24	2	0	11.30	11.5	10.91	1550	mg/kg
Metal	Copper	24	13	0	86.88	390	18.06	40900	mg/kg
Metal	Iron	24	7	0	31971	58900	18037	307000	mg/kg
Metal	Lead	24	4	0	121.78	186	54.6	1000	mg/kg
Metal	Lithium	21	2	0	12.50	13	11.6	20400	mg/kg
Metal	Manganese	24	5	0	664	1190	365	3480	mg/kg
Metal	Nickel	24	11	0	31.20	68	14.9	20400	mg/kg
Metal	Strontium	24	9	0	131	284	48.9	613000	mg/kg
Metal	Tin	24	1	0	4.75	4.75	2.9	613000	mg/kg
Metal	Vanadium	24	5	0	118	191	45.6	7150	mg/kg
Metal	Zinc	24	12	0	179	462	73.8	307000	mg/kg
PCB	Aroclor-1254	13	4	0	31.50	86	-	12400	ug/kg
PCB	Aroclor-1260	13	3	1	18022	54000	-	12400	ug/kg
Radionuclide	Americium-241	28	12	0	0.49	1.381	0.0227	76	pCi/g
Radionuclide	Plutonium-239/240	28	11	0	2.03	5.7456	0.066	50	pCi/g
Radionuclide	Uranium-234	28	11	0	3.63	5	2.25	300	pCi/g
Radionuclide	Uranium-235	28	13	0	0.19	0.3	0.0939	8	pCi/g
Radionuclide	Uranium-238	28	11	0	4.51	13.3	2	351	pCi/g
SVOC	Acenaphthene	15	3	0	104	130	-	40800000	ug/kg
SVOC	Anthracene	15	3	0	147	160	-	204000000	ug/kg
SVOC	Benzo(a)anthracene	15	5	0	469	880	-	34900	ug/kg
SVOC	Benzo(a)pyrene	15	3	0	593	890	-	3490	ug/kg
SVOC	Benzo(b)fluoranthene	15	4	0	585	1200	-	34900	ug/kg
SVOC	Benzo(k)fluoranthene	15	4	0	420	440	-	349000	ug/kg
SVOC	Benzoic Acid	14	1	0	440	440	-	1000000000	ug/kg
SVOC	bis(2-Ethylhexyl)phthalate	15	1	0	220	220	-	1970000	ug/kg
SVOC	Chrysene	15	5	0	498	870	-	3490000	ug/kg
SVOC	Di-n-octylphthalate	15	1	0	150	150	-	14700000	ug/kg
SVOC	Dibenz(a,h)anthracene	15	2	0	78.00	90	-	3490	ug/kg
SVOC	Fluoranthene	15	5	0	1142	1900	-	27200000	ug/kg
SVOC	Fluorene	15	3	0	79.33	100	-	40800000	ug/kg
SVOC	Indeno(1,2,3-cd)pyrene	15	4	0	318	670	-	34900	ug/kg
SVOC	Pyrene	15	5	0	936	1700	-	22100000	ug/kg

22

Analyte Group	Analyte	Total Number Samples Analyzed	Number of Samples above BG but below the AL	Number of Samples above the AL	Average Conc	Maximum Conc	BG Mean Plus 2SD	Wildlife Refuge Worker AL	Unit
VOC	Tetrachloroethene	5	2	0	25.50	43	-	615000	ug/kg

Exceeds Wildlife Refuge Worker Action Level

Note: Analytes shown are those that were detected at least once above background levels and have a Wildlife Refuge Worker Action Level. The maximum concentration is the maximum detected value, and the average concentration is the average of the data that exceed background.

AL - Action Level

BG – Background

SD – Standard Deviation

Table 6 Summary of Constituents Above Background in Subsurface Soil

Analyte Group	Analyte	Total Number Samples Analyzed	Number of Samples above BG but below the AL	Number of Samples above the AL	Average Conc.	Maximum Conc.	BG Mean Plus 2SD	Wildlife Refuge Worker AL	Unit
Metal	Aluminum	42	5	0	42600-	50000	35373	228000	mg/kg
Metal	Arsenic	54	7	2	21.86	39	13.14	22.2	mg/kg
Metal	Barium	54	12	0	612	1060	289	26400	mg/kg
Metal	Cadmium	54	1	0	7.20	7.2	1.7	962	mg/kg
Metal	Chromium	54	1	1	408	408	68.27	268	mg/kg
Metal	Copper	54	11	0	76.47	122	38.21	40900	mg/kg
Metal	Lead	54	3	0	29.17	33.4	24.97	1000	mg/kg
Metal	Lithium	42	1	0	36.00	36	34.66	20400	mg/kg
Metal	Mercury	44	1	0	3.20	3.2	1.52	25200	mg/kg
Metal	Molybdenum	54	1	0	166	166	25.61	5110	mg/kg
Metal	Strontium	54	3	0	316	388	211	613000	mg/kg
Metal	Uranium, Total	33	1	0	4.00	4	3.04	2750	mg/kg
Metal	Vanadium	54	7	0	164	249	88.49	7150	mg/kg
Metal	Zinc	54	1	0	582	582	139.1	307000	mg/kg
PCB	Aroclor-1254	22	7	0	1671	4200	-	12400	ug/kg
PCB	Aroclor-1260	22	4	0	409	1500	-	12400	ug/kg
Pesticide	4,4'-DDT	8	1	0	19.00	19	-	100000	ug/kg
Pesticide	Endosulfan II	8	1	0	12.00	12	-	4420000	ug/kg
Radionuclide	Americium-241	61	12	0	2.47	16.8	0.02	76	pCi/g
Radionuclide	Plutonium-239/240	61	15	0	4.56	12.18	0.02	50	pCi/g
Radionuclide	Uranium-234	61	22	0	4.09	6.10	2.64	300	pCi/g
Radionuclide	Uranium-235	61	33	0	0.20	0.357	0.12	8	pCi/g
Radionuclide	Uranium-238	61	31	0	3.48	6.10	1.49	351	pCi/g
SVOC	2-Methylnaphthalene	17	3	0	837	1300	-	20400000	ug/kg
SVOC	Acenaphthene	17	4	0	1099	2100	-	40800000	ug/kg
SVOC	Anthracene	17	4	0	1143	2100	-	204000000	ug/kg
SVOC	Benzo(a)anthracene	17	4	0	1853	3600	-	34900	ug/kg
SVOC	Benzo(a)pyrene	17	3	0	2180	3100	-	3490	ug/kg
SVOC	Benzo(b)fluoranthene	17	4	0	1830	3600	-	34900	ug/kg
SVOC	Benzo(k)fluoranthene	17	4	0	758	1500	-	349000	ug/kg
SVOC	bis(2-Ethylhexyl)phthalate	17	1	0	150	150	-	1970000	ug/kg
SVOC	Chrysene	17	4	0	2095	4200	-	3490000	ug/kg
SVOC	Dibenzofuran	17	3	0	753	1100	-	2950000	ug/kg
SVOC	Fluoranthene	17	5	0	3300	8000	-	27200000	ug/kg
SVOC	Fluorene	17	4	0	874	1700	-	40800000	ug/kg
SVOC	Indeno(1,2,3-cd)pyrene	17	4	0	698	1400	-	34900	ug/kg
SVOC	Pyrene	17	4	0	3505	6500	-	22100000	ug/kg
VOC	1,1,1-Trichloroethane	74	2	0	38.50	56	-	79700000	ug/kg
VOC	1,2-Dichloropropane	74	1	0	71.60	71.6	-	345000	ug/kg
VOC	2-Butanone	74	1	0	11.00	11	-	192000000	ug/kg

Analyte Group	Analyte	Total Number Samples Analyzed	Number of Samples above BG but below the AL	Number of Samples above the AL	Average Conc.	Maximum Conc.	BG Mean Plus 2SD	Wildlife Refuge Worker AL	Unit
VOC	Acetone	74	8	0	16.33	66	-	102000000	ug/kg
VOC	Chloroform	74	2	0	37.00	57	-	19200	ug/kg
VOC	Ethylbenzene	74	1	0	21.00	21	-	4250000	ug/kg
VOC	Methylene chloride	74	8	0	10.93	20	-	2530000	ug/kg
VOC	Naphthalene	80	7	0	1829	6200	-	3090000	ug/kg
VOC	Styrene	74	1	0	17.00	17	-	123000000	ug/kg
VOC	Tetrachloroethene	74	8	0	202	610	-	615000	ug/kg
VOC	Toluene	74	2	0	22.25	43	-	31300000	ug/kg
VOC	Trichloroethene	74	2	0	93.50	120	-	19600	ug/kg
VOC	Xylene	74	2	0	66.05	110	-	2040000	ug/kg
	Exceeds Wildlife Refuge Worker Action Level								

Note: Analytes shown are those that were detected at least once above background levels and have a Wildlife Refuge Worker Action Level. The maximum concentration is the maximum detected value, and the average concentration is the average of the data that exceed background.
AL - Action Level
BG – Background
SD – Standard Deviation

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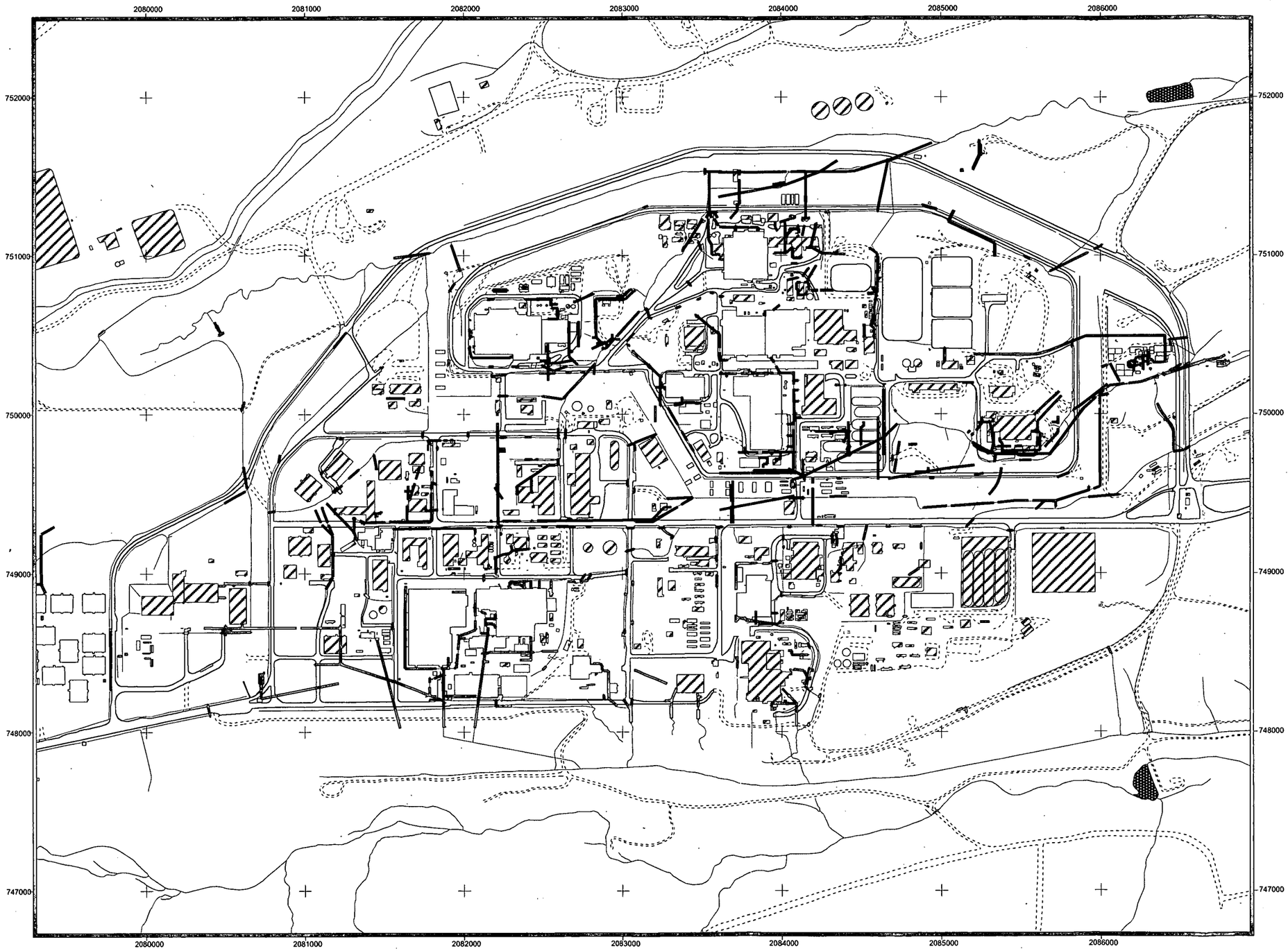

Figure 1
1999 Storm Drain Locations
(PAC 000-505)

KEY

- Storm drains
- Dirt road
- Stream
- Paved road
- Lakes
- Solar ponds
- Demolished building
- Standing building

DRAFT

N
W E
S

500 0 500 Feet

Scale = 1: 7700

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: RADMS

Date: 8.31.04

Prepared for: KAISER•HILL COMPANY

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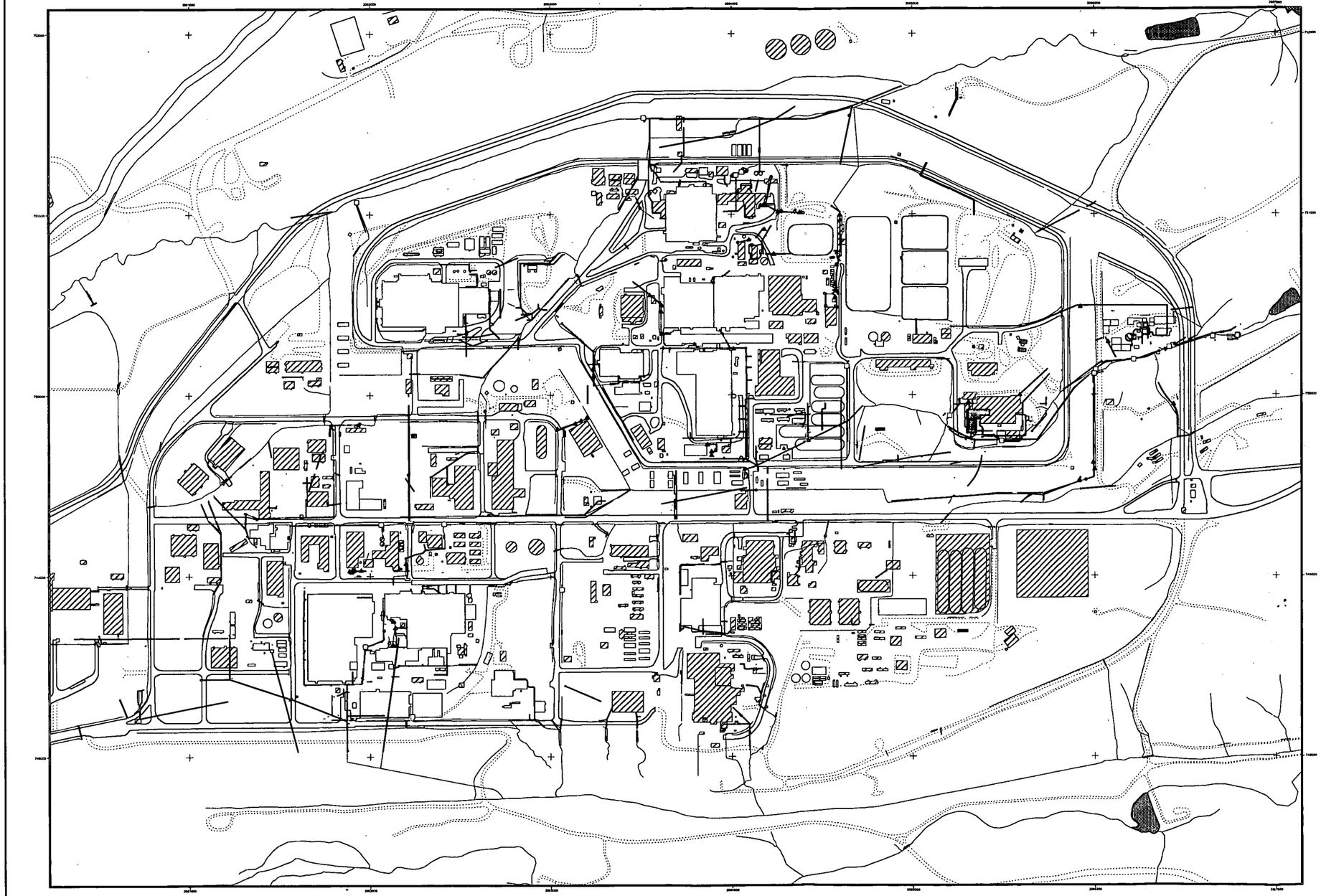

Figure 2 - PAC 000-505
Sample Locations

KEY

- ▲ Subsurface soil sampling station
- ◦ Surface soil sampling station
- ▫ Sediment sampling station
- PAC 700-143
- PAC 400-803
- PAC 700-1103
- IHSS 400-5
- IHSS 900-1
- Storm drain
- Dirt road
- Stream
- Paved road
- Lake
- Solar pond
- Demolished building
- Standing building

DRAFT

N
W E
S

300 0 300 Feet

Scale 1:3500

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: RADMS

Date: 09/16/2004

Prepared for: KAISER•HILL COMPANY

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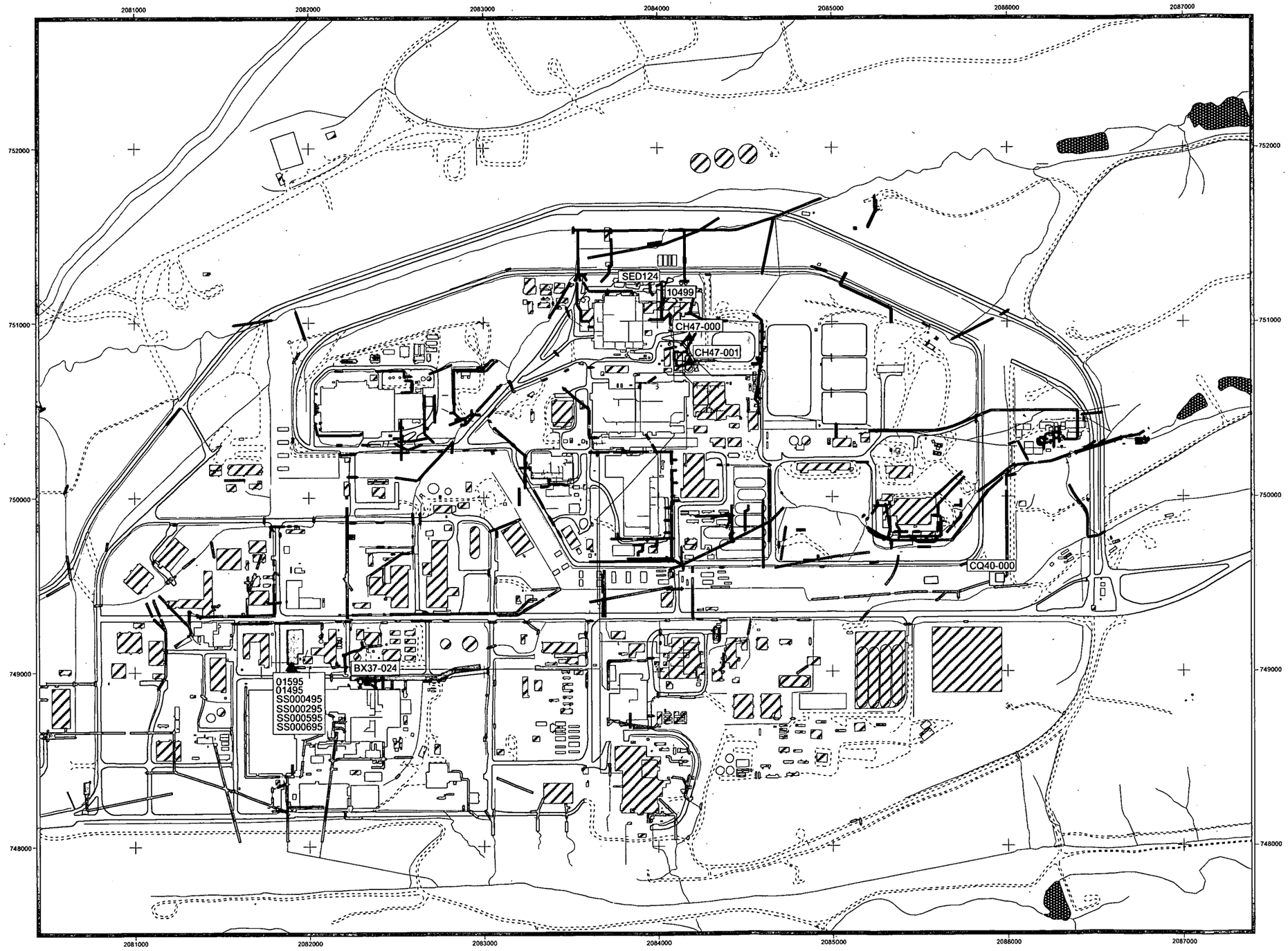

Figure 3 - Sample Locations Excluded from PAC 000-505 Evaluation

KEY

- ▲ Subsurface soil sampling station
- • Surface soil sampling station
- ▫ Sediment sampling station
- Group 700-11
- Group 400-8
- Group 900-2
- Group 400-4
- OPWL
- Storm drain
- Dirt road
- Stream
- Paved road
- Lake
- Solar pond
- Demolished building
- Standing building

DRAFT

N
W E
S

500 0 500 Feet

Scale = 1: 7000

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Date: 9.22.04

Prepared by: RADMS

Prepared for: KAISER•HILL COMPANY

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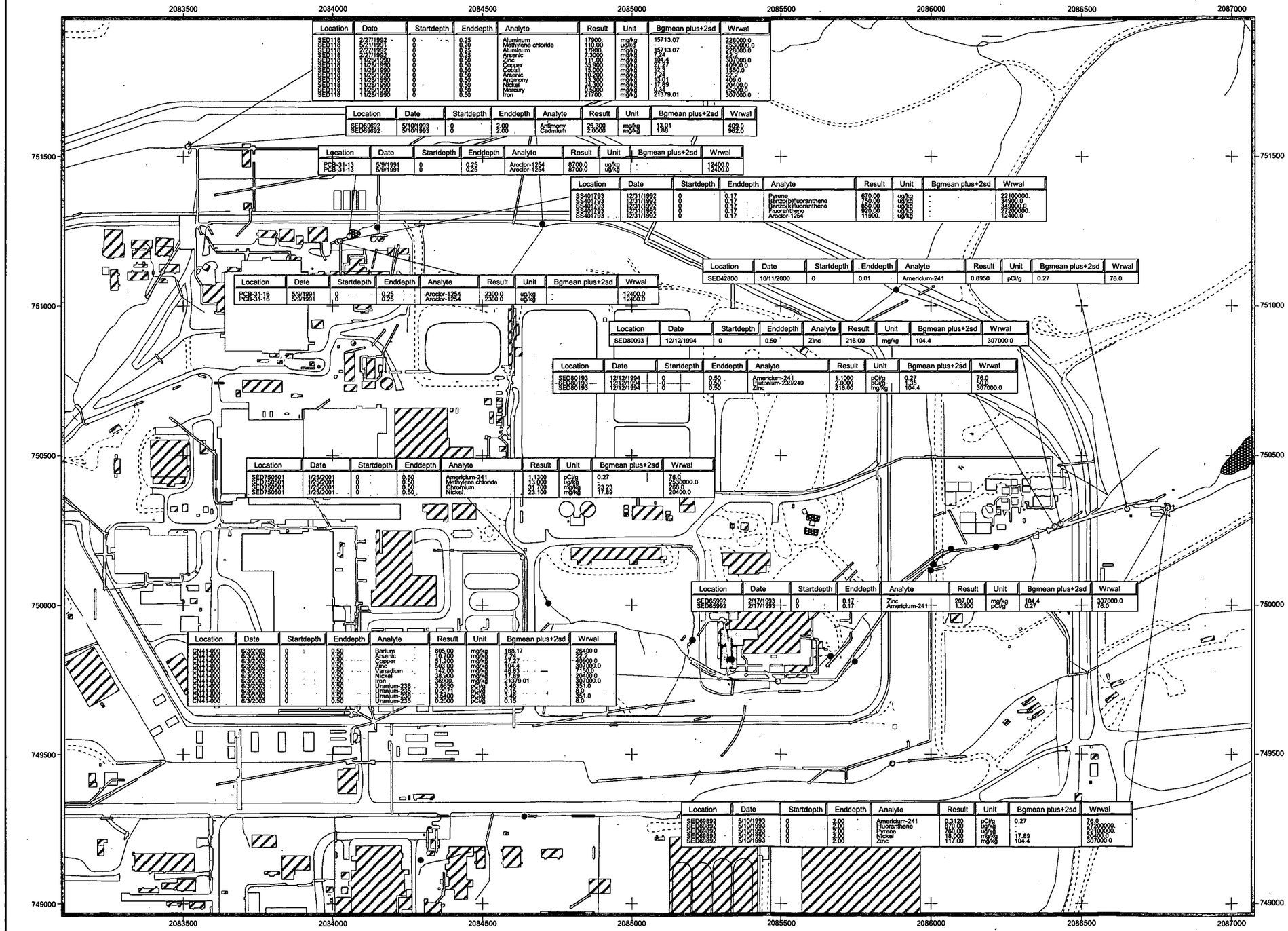
Figure 4a
Constitutents Above Background in Sediment East



KEY

- Less than WRW and greater than background
- Less than background
- Storm drain
- Dirt road
- Solar pond
- PAC 400-803
- PAC 700-1103
- IHSS Group 400-5
- IHSS Group 900-1
- PAC 700-143
- Stream, ditch, or other drainage feature
- Lake
- Asphalt
- Demolished building
- Standing building

DRAFT

N W E S

200 0 200 Feet

Scale = 1:4,000

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Date:10.19.2004

Prepared by: RADMS

Prepared for: KAISER•HILL COMPANY

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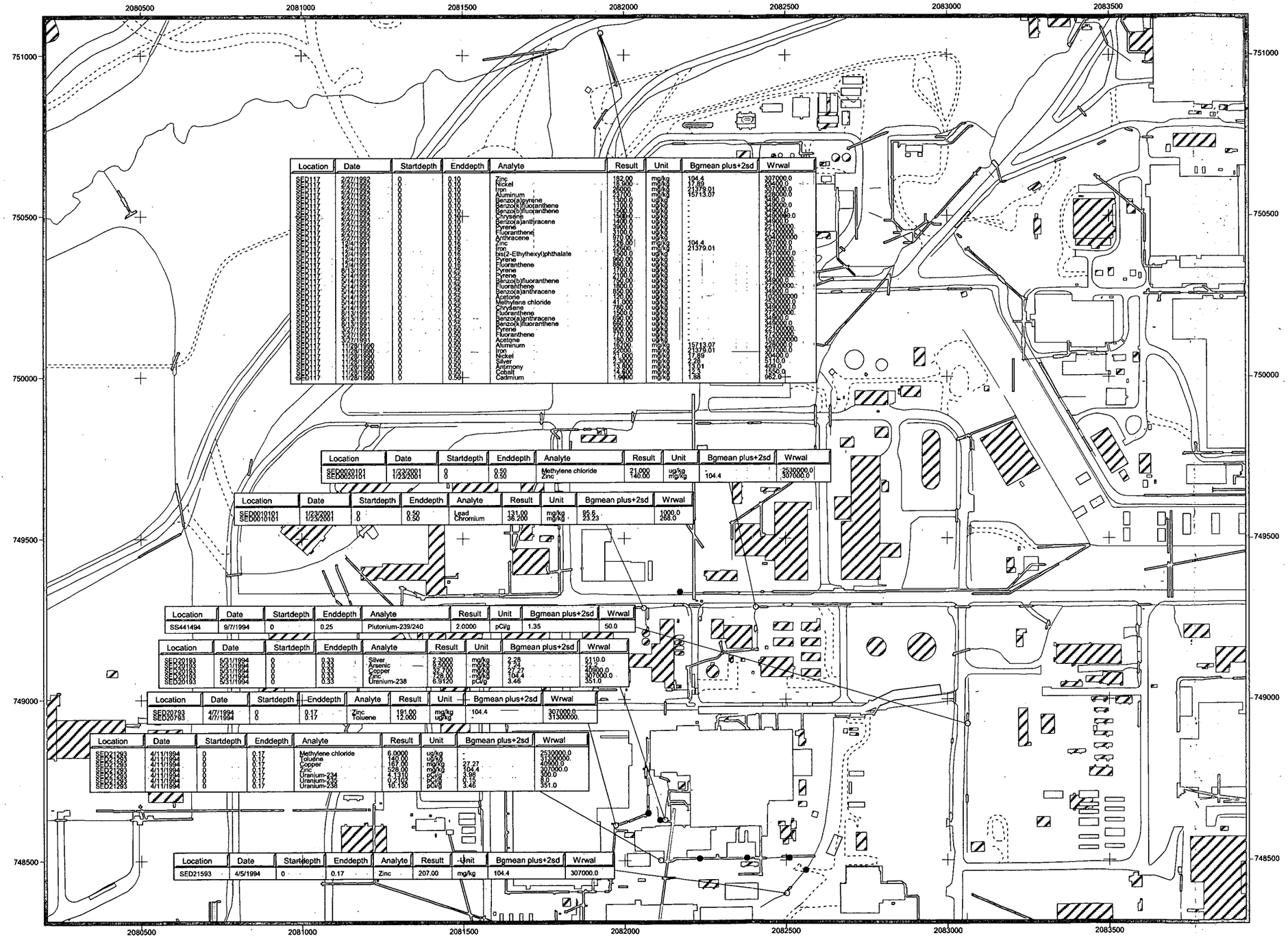

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean plus+2sd	Wrwal
SED117	2/27/1992	0	0.10	Zinc	182.00	mg/kg	104.4	307000.0
SED117	2/27/1992	0	0.10	Nickel	38.500	mg/kg	17.89	204400.0
SED117	2/27/1992	0	0.10	Iron	25000.	mg/kg	21379.01	3013000.0
SED117	2/27/1992	0	0.10	Aluminum	23100.	mg/kg	15713.07	2260000.0
SED117	2/27/1992	0	0.10	Benzo(a)pyrene	1300.0	ug/kg	-	349000.0
SED117	2/27/1992	0	0.10	Benzo(k)fluoranthene	1100.0	ug/kg	-	3490000.0
SED117	2/27/1992	0	0.10	Benzo(b)fluoranthene	1500.0	ug/kg	-	349000.0
SED117	2/27/1992	0	0.10	Chrysene	1500.0	ug/kg	-	3490000.0
SED117	2/27/1992	0	0.10	Benzo(a)anthracene	1400.0	ug/kg	-	349000.0
SED117	2/27/1992	0	0.10	Pyrene	3900.0	ug/kg	-	221000.0
SED117	2/27/1992	0	0.10	Fluoranthene	3100.0	ug/kg	-	221000.0
SED117	2/27/1992	0	0.10	Anthracene	970.00	ug/kg	-	2530000.0
SED117	12/4/1991	0	0.16	Zinc	128.00	mg/kg	104.4	307000.0
SED117	12/4/1991	0	0.16	Iron	22500.	mg/kg	21379.01	307000.0
SED117	12/4/1991	0	0.16	bis(2-Ethylhexyl)phthalate	1500.0	ug/kg	-	1970000.0
SED117	12/4/1991	0	0.16	Pyrene	950.00	ug/kg	-	221000.0
SED117	12/4/1991	0	0.16	Fluoranthene	880.00	ug/kg	-	221000.0
SED117	8/13/1991	0	0.25	Pyrene	1700.0	ug/kg	-	221000.0
SED117	8/13/1991	0	0.25	Fluoranthene	2100.0	ug/kg	-	221000.0
SED117	5/14/1991	0	0.25	Benzo(b)fluoranthene	1500.0	ug/kg	-	349000.0
SED117	5/14/1991	0	0.25	Fluoranthene	1800.0	ug/kg	-	221000.0
SED117	5/14/1991	0	0.25	Benzo(a)anthracene	850.00	ug/kg	-	349000.0
SED117	5/14/1991	0	0.25	Acetone	120.00	ug/kg	-	10300000.0
SED117	5/14/1991	0	0.25	Methylene chloride	41.000	ug/kg	-	2530000.0
SED117	5/14/1991	0	0.25	Chrysene	780.00	ug/kg	-	3490000.0
SED117	8/13/1991	0	0.25	Fluoranthene	1500.0	ug/kg	-	221000.0
SED117	8/13/1991	0	0.25	Benzo(a)anthracene	650.00	ug/kg	-	349000.0
SED117	8/13/1991	0	0.25	Benzo(k)fluoranthene	660.00	ug/kg	-	3490000.0
SED117	8/13/1991	0	0.25	Pyrene	900.00	ug/kg	-	221000.0
SED117	3/7/1991	0	0.50	Fluoranthene	770.00	ug/kg	-	221000.0
SED117	3/7/1991	0	0.50	Acetone	160.00	ug/kg	-	10300000.0
SED117	11/29/1990	0	0.50	Aluminum	16200	mg/kg	15713.07	2260000.0
SED117	11/28/1990	0	0.50	Iron	22000	mg/kg	21378.01	3013000.0
SED117	11/28/1990	0	0.50	Nickel	21.000	mg/kg	17.89	204400.0
SED117	11/28/1990	0	0.50	Silver	2.200	mg/kg	2.28	5110.0
SED117	11/28/1990	0	0.50	Antimony	13.000	mg/kg	13.01	409.0
SED117	11/28/1990	0	0.50	Cobalt	14.500	mg/kg	12.3	1526.0
SED117	11/28/1990	0	0.50	Cadmium	1.9000	mg/kg	1.86	982.0

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean plus+2sd	Wrwal
SED0020101	1/23/2001	0	0.50	Methylene chloride	21.000	ug/kg	-	2530000.0
SED0020101	1/23/2001	0	0.50	Zinc	140.00	mg/kg	104.4	307000.0

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean plus+2sd	Wrwal
SED0010101	1/23/2001	0	0.50	Lead	131.00	mg/kg	95.6	1000.0
SED0010101	1/23/2001	0	0.50	Chromium	36.200	mg/kg	23.23	268.0

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean plus+2sd	Wrwal
SS441494	9/7/1994	0	0.25	Plutonium-239/240	2.0000	pCi/g	1.35	50.0

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean plus+2sd	Wrwal
SED20193	5/31/1994	0	0.33	Silver	2.3000	mg/kg	2.28	5110.0
SED20193	5/31/1994	0	0.33	Arsenic	9.5000	mg/kg	7.73	409.0
SED20193	5/31/1994	0	0.33	Copper	32.700	mg/kg	27.27	40900.0
SED20193	5/31/1994	0	0.33	Zinc	728.00	mg/kg	104.4	307000.0
SED20193	5/31/1994	0	0.33	Uranium-238	6.9120	pCi/g	3.46	351.0

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean plus+2sd	Wrwal
SED20793	4/7/1994	0	0.17	Zinc	191.00	mg/kg	104.4	307000.0
SED20793	4/7/1994	0	0.17	Toluene	12.000	ug/kg	-	31300000.

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean plus+2sd	Wrwal
SED21293	4/11/1994	0	0.17	Methylene chloride	6.0000	ug/kg	-	2530000.0
SED21293	4/11/1994	0	0.17	Toluene	140.00	ug/kg	-	31300000.
SED21293	4/11/1994	0	0.17	Copper	67.00	mg/kg	27.27	40900.0
SED21293	4/11/1994	0	0.17	Zinc	528.00	mg/kg	104.4	307000.0
SED21293	4/11/1994	0	0.17	Uranium-234	4.1310	pCi/g	1.98	300.0
SED21293	4/11/1994	0	0.17	Uranium-235	0.2102	pCi/g	0.15	8.0
SED21293	4/11/1994	0	0.17	Uranium-238	10.130	pCi/g	3.46	351.0

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean plus+2sd	Wrwal
SED21593	4/5/1994	0	0.17	Zinc	207.00	mg/kg	104.4	307000.0

Figure 4b Constitutents Above Background in Sediment West

KEY

- Less than WRW and greater than background
- Less than background
- Storm drain
- Dirt road
- Solar pond
- PAC 400-803
- PAC 700-1103
- IHSS Group 400-5
- IHSS Group 900-1
- PAC 700-143
- Stream, ditch, or other drainage feature
- Lake
- Asphalt
- Demolished building
- Standing building

DRAFT

N W E S

300 0 300 Feet

Scale = 1:3,750

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Date:10.19.2004

Prepared by: RADMS

Prepared for: KAISER•HILL COMPANY

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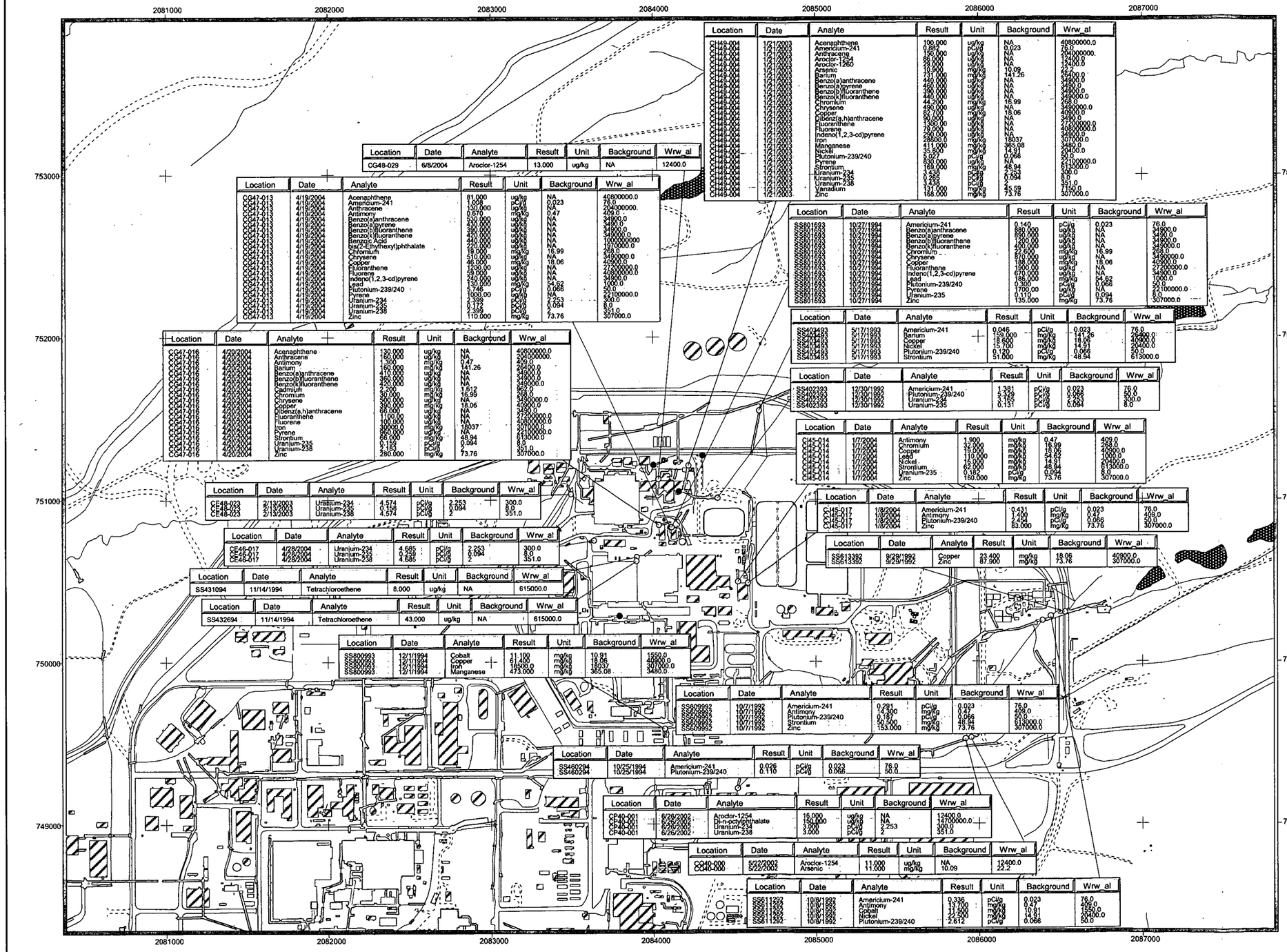
Figure 5a - Constitutents Above Background in Surface Soil East



Location	Date	Analyte	Result	Unit	Background	Wrw_al
CG48-029	6/8/2004	Aroclor-1254	13.000	ug/kg	NA	12400.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
CG47-013	4/19/2004	Acenaphthene	81.000	ug/kg	NA	40800000.0
CG47-013	4/19/2004	Americium-241	1.008	pCi/g	0.023	76.0
CG47-013	4/19/2004	Anthracene	130.000	ug/kg	NA	2040000.
CG47-013	4/19/2004	Antimony	0.670	mg/kg	0.47	409.0
CG47-013	4/19/2004	Benzo(a)anthracene	230.000	ug/kg	NA	34900.0
CG47-013	4/19/2004	Benzo(a)pyrene	230.000	ug/kg	NA	3490.0
CG47-013	4/19/2004	Benzo(b)fluoranthene	430.000	ug/kg	NA	34900.0
CG47-013	4/19/2004	Benzo(k)fluoranthene	410.000	ug/kg	NA	349000.0
CG47-013	4/19/2004	Benzoic Acid	440.000	ug/kg	NA	10000000000
CG47-013	4/19/2004	bis(2-Ethylhexyl)phthalate	220.000	ug/kg	NA	1810000.0
CG47-013	4/19/2004	Chromium	19.000	mg/kg	16.99	268.0
CG47-013	4/19/2004	Chrysene	510.000	ug/kg	NA	3490000.0
CG47-013	4/19/2004	Copper	46.000	mg/kg	18.06	40900.0
CG47-013	4/19/2004	Fluoranthene	1200.00	ug/kg	NA	27300000.0
CG47-013	4/19/2004	Fluorene	59.000	ug/kg	NA	4080000.0
CG47-013	4/19/2004	Indeno(1,2,3-cd)pyrene	240.000	ug/kg	NA	34900.0
CG47-013	4/19/2004	Lead	130.000	mg/kg	24.62	1000.0
CG47-013	4/19/2004	Plutonium-239/240	5.746	pCi/g	0.066	50.0
CG47-013	4/19/2004	Pyrene	1000.00	ug/kg	NA	221000000.0
CG47-013	4/19/2004	Uranium-234	2.399	pCi/g	2.253	300.0
CG47-013	4/19/2004	Uranium-235	0.172	pCi/g	0.094	8.0
CG47-013	4/19/2004	Uranium-238	2.399	pCi/g	2	351.0
CG47-013	4/19/2004	Zinc	110.000	mg/kg	73.76	307000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
CG47-016	4/20/2004	Acenaphthene	130.000	ug/kg	NA	40800000.0
CG47-016	4/20/2004	Anthracene	160.000	ug/kg	NA	2040000.
CG47-016	4/20/2004	Antimony	1.300	mg/kg	0.47	409.0
CG47-016	4/20/2004	Barium	160.000	mg/kg	141.26	264000.0
CG47-016	4/20/2004	Benzo(a)anthracene	410.000	ug/kg	NA	34900.0
CG47-016	4/20/2004	Benzo(b)fluoranthene	360.000	ug/kg	NA	34900.0
CG47-016	4/20/2004	Benzo(k)fluoranthene	230.000	ug/kg	NA	349000.0
CG47-016	4/20/2004	Cadmium	2.200	mg/kg	1.612	962.0
CG47-016	4/20/2004	Chromium	30.000	mg/kg	16.99	268.0
CG47-016	4/20/2004	Chrysene	500.000	ug/kg	NA	3490000.0
CG47-016	4/20/2004	Copper	280.000	mg/kg	18.06	40900.0
CG47-016	4/20/2004	Dibenz(a,h)anthracene	66.000	ug/kg	NA	3490.0
CG47-016	4/20/2004	Fluoranthene	1100.00	ug/kg	NA	27300000.0
CG47-016	4/20/2004	Fluorene	100.000	ug/kg	NA	4080000.0
CG47-016	4/20/2004	Iron	34000.0	mg/kg	18037	307000.0
CG47-016	4/20/2004	Pyrene	960.000	ug/kg	NA	22100000.0
CG47-016	4/20/2004	Strontium	66.000	mg/kg	48.84	613000.0
CG47-016	4/20/2004	Uranium-235	0.156	pCi/g	0.094	8.0
CG47-016	4/20/2004	Uranium-238	4.574	pCi/g	2	351.0
CG47-016	4/20/2004	Zinc	280.000	mg/kg	73.76	307000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
CE48-023	2/13/2003	Uranium-234	4.574	pCi/g	2.253	300.0
CE48-023	2/13/2003	Uranium-235	0.156	pCi/g	0.094	8.0
CE48-023	2/13/2003	Uranium-238	4.574	pCi/g	2	351.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
CE46-017	4/28/2004	Uranium-234	4.685	pCi/g	2.253	300.0
CE46-017	4/28/2004	Uranium-235	0.259	pCi/g	0.094	8.0
CE46-017	4/28/2004	Uranium-238	4.685	pCi/g	2	351.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
SS431094	11/14/1994	Tetrachloroethene	8.000	ug/kg	NA	615000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
SS432694	11/14/1994	Tetrachloroethene	43.000	ug/kg	NA	615000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
SS800993	12/1/1994	Cobalt	11.100	mg/kg	10.91	1550.0
SS800993	12/1/1994	Copper	61.400	mg/kg	18.06	40900.0
SS800993	12/1/1994	Iron	18900.0	mg/kg	18037	307000.0
SS800993	12/1/1994	Manganese	473.000	mg/kg	365.08	3480.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
SS460294	10/25/1994	Americium-241	0.026	pCi/g	0.023	76.0
SS460294	10/25/1994	Plutonium-239/240	0.110	pCi/g	0.066	50.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
CP40-001	6/26/2002	Aroclor-1254	16.000	ug/kg	NA	12400.0
CP40-001	6/26/2002	Di-n-octylphthalate	150.000	ug/kg	NA	14700000.0
CP40-001	6/26/2002	Uranium-234	3.000	pCi/g	2.253	300.0
CP40-001	6/26/2002	Uranium-238	3.000	pCi/g	2	351.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
CP40-000	5/22/2002	Aroclor-1254	11.000	ug/kg	NA	12400.0
CP40-000	5/22/2002	Arsenic	11.000	mg/kg	10.09	22.2

Location	Date	Analyte	Result	Unit	Background	Wrw_al
SS611292	10/8/1992	Americium-241	0.335	pCi/g	0.023	76.0
SS611292	10/8/1992	Antimony	13.700	mg/kg	0.47	409.0
SS611292	10/8/1992	Cobalt	11.500	mg/kg	10.91	1550.0
SS611292	10/8/1992	Nickel	23.200	mg/kg	14.91	20400.0
SS611292	10/8/1992	Plutonium-239/240	2.612	pCi/g	0.066	50.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
CG49-004	1/21/2003	Acenaphthene	100.000	ug/kg	NA	40800000.0
CG49-004	1/21/2003	Americium-241	0.882	pCi/g	0.023	76.0
CG49-004	1/21/2003	Anthracene	150.000	ug/kg	NA	2040000.
CG49-004	1/21/2003	Aroclor-1254	66.000	ug/kg	NA	12400.0
CG49-004	1/21/2003	Aroclor-1260	28.000	ug/kg	NA	12400.0
CG49-004	1/21/2003	Arsenic	10.900	mg/kg	10.09	22.2
CG49-004	1/21/2003	Barium	171.000	mg/kg	141.26	5520.0
CG49-004	1/21/2003	Benzo(a)anthracene	440.000	ug/kg	NA	34900.0
CG49-004	1/21/2003	Benzo(a)pyrene	460.000	ug/kg	NA	3490.0
CG49-004	1/21/2003	Benzo(b)fluoranthene	390.000	ug/kg	NA	34900.0
CG49-004	1/21/2003	Benzo(k)fluoranthene	440.000	ug/kg	NA	349000.0
CG49-004	1/21/2003	Chromium	44.200	mg/kg	16.99	268.0
CG49-004	1/21/2003	Chrysene	490.000	ug/kg	NA	3490000.0
CG49-004	1/21/2003	Copper	52.100	mg/kg	18.06	40900.0
CG49-004	1/21/2003	Dibenz(a,h)anthracene	90.000	ug/kg	NA	3490.0
CG49-004	1/21/2003	Fluoranthene	1300.00	ug/kg	NA	27300000.0
CG49-004	1/21/2003	Fluorene	70.000	ug/kg	NA	4080000.0
CG49-004	1/21/2003	Indeno(1,2,3-cd)pyrene	290.000	ug/kg	NA	34900.0
CG49-004	1/21/2003	Iron	28800.0	mg/kg	18037	307000.0
CG49-004	1/21/2003	Manganese	411.000	mg/kg	365.08	3480.0
CG49-004	1/21/2003	Nickel	35.800	mg/kg	14.91	20400.0
CG49-004	1/21/2003	Plutonium-239/240	0.027	pCi/g	0.066	50.0
CG49-004	1/21/2003	Pyrene	920.000	ug/kg	NA	22100000.0
CG49-004	1/21/2003	Strontium	169.000	mg/kg	48.84	613000.0
CG49-004	1/21/2003	Uranium-234	3.436	pCi/g	2.253	300.0
CG49-004	1/21/2003	Uranium-235	0.255	pCi/g	0.094	8.0
CG49-004	1/21/2003	Uranium-238	3.436	pCi/g	2	351.0
CG49-004	1/21/2003	Vanadium	131.000	mg/kg	45.59	7150.0
CG49-004	1/21/2003	Zinc	168.000	mg/kg	73.76	307000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
SS801693	10/27/1994	Americium-241	0.140	pCi/g	0.023	76.0
SS801693	10/27/1994	Benzo(a)anthracene	860.000	ug/kg	NA	34900.0
SS801693	10/27/1994	Benzo(a)pyrene	990.000	ug/kg	NA	3490.0
SS801693	10/27/1994	Benzo(b)fluoranthene	1200.00	ug/kg	NA	34900.0
SS801693	10/27/1994	Benzo(k)fluoranthene	1000.00	ug/kg	NA	349000.0
SS801693	10/27/1994	Chromium	22.600	mg/kg	16.99	268.0
SS801693	10/27/1994	Chrysene	870.000	ug/kg	NA	3490000.0
SS801693	10/27/1994	Copper	188.000	mg/kg	18.06	40900.0
SS801693	10/27/1994	Fluoranthene	1900.00	ug/kg	NA	27300000.0
SS801693	10/27/1994	Indeno(1,2,3-cd)pyrene	670.000	ug/kg	NA	34900.0
SS801693	10/27/1994	Lead	185.000	mg/kg	24.62	1000.0
SS801693	10/27/1994	Plutonium-239/240	0.380	pCi/g	0.066	50.0
SS801693	10/27/1994	Pyrene	1700.00	ug/kg	NA	22100000.0
SS801693	10/27/1994	Uranium-235	0.110	pCi/g	0.094	8.0
SS801693	10/27/1994	Zinc	135.000	mg/kg	73.76	307000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
SS403493	5/17/1993	Americium-241	0.046	pCi/g	0.023	76.0
SS403493	5/17/1993	Barium	159.000	mg/kg	141.26	264000.0
SS403493	5/17/1993	Copper	18.500	mg/kg	18.06	40900.0
SS403493	5/17/1993	Nickel	15.700	mg/kg	14.91	20400.0
SS403493	5/17/1993	Plutonium-239/240	0.120	pCi/g	0.066	50.0
SS403493	5/17/1993	Strontium	51.000	mg/kg	48.84	613000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
SS402393	12/30/1992	Americium-241	1.381	pCi/g	0.023	76.0
SS402393	12/30/1992	Plutonium-239/240	3.169	pCi/g	0.066	50.0
SS402393	12/30/1992	Uranium-234	3.000	pCi/g	2.253	300.0
SS402393	12/30/1992	Uranium-235	0.131	pCi/g	0.094	8.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
CI45-014	1/7/2004	Antimony	1.900	mg/kg	0.47	409.0
CI45-014	1/7/2004	Chromium	32.000	mg/kg	16.99	268.0
CI45-014	1/7/2004	Copper	19.000	mg/kg	18.06	40900.0
CI45-014	1/7/2004	Lead	110.000	mg/kg	24.62	1000.0
CI45-014	1/7/2004	Nickel	16.000	mg/kg	14.91	20400.0
CI45-014	1/7/2004	Strontium	49.000	mg/kg	48.84	613000.0
CI45-014	1/7/2004	Uranium-235	0.135	pCi/g	0.094	8.0
CI45-014	1/7/2004	Zinc	160.000	mg/kg	73.76	307000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
CI45-017	1/8/2004	Americium-241	0.431	pCi/g	0.023	76.0
CI45-017	1/8/2004	Antimony	1.400	mg/kg	0.47	409.0
CI45-017	1/8/2004	Plutonium-239/240	2.452	pCi/g	0.066	50.0
CI45-017	1/8/2004	Zinc	83.000	mg/kg	73.76	307000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
SS613392	8/29/1992	Copper	23.400	mg/kg	18.06	40900.0
SS613392	8/29/1992	Zinc	87.900	mg/kg	73.76	307000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
SS609992	10/7/1992	Americium-241	0.291	pCi/g	0.023	76.0
SS609992	10/7/1992	Antimony	14.900	mg/kg	0.47	409.0
SS609992	10/7/1992	Plutonium-239/240	0.187	pCi/g	0.066	50.0
SS609992	10/7/1992	Strontium	50.500	mg/kg	48.84	613000.0
SS609992	10/7/1992	Zinc	153.000	mg/kg	73.76	307000.0

KEY

- Less than WRW and greater than background
- Less than background
- Storm drain
- Dirt road
- Solar pond
- PAC 400-803
- PAC 700-1103
- IHSS Group 400-5
- IHSS Group 900-1
- PAC 700-143
- Stream, ditch, or other drainage feature
- Lake
- Asphalt
- Demolished building
- Standing building

DRAFT

N
W E
S

500 0 500 Feet

Scale = 1: 7500

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Date: 10.19.04

Prepared by: RADMS

Prepared for: KAISER•HILL COMPANY

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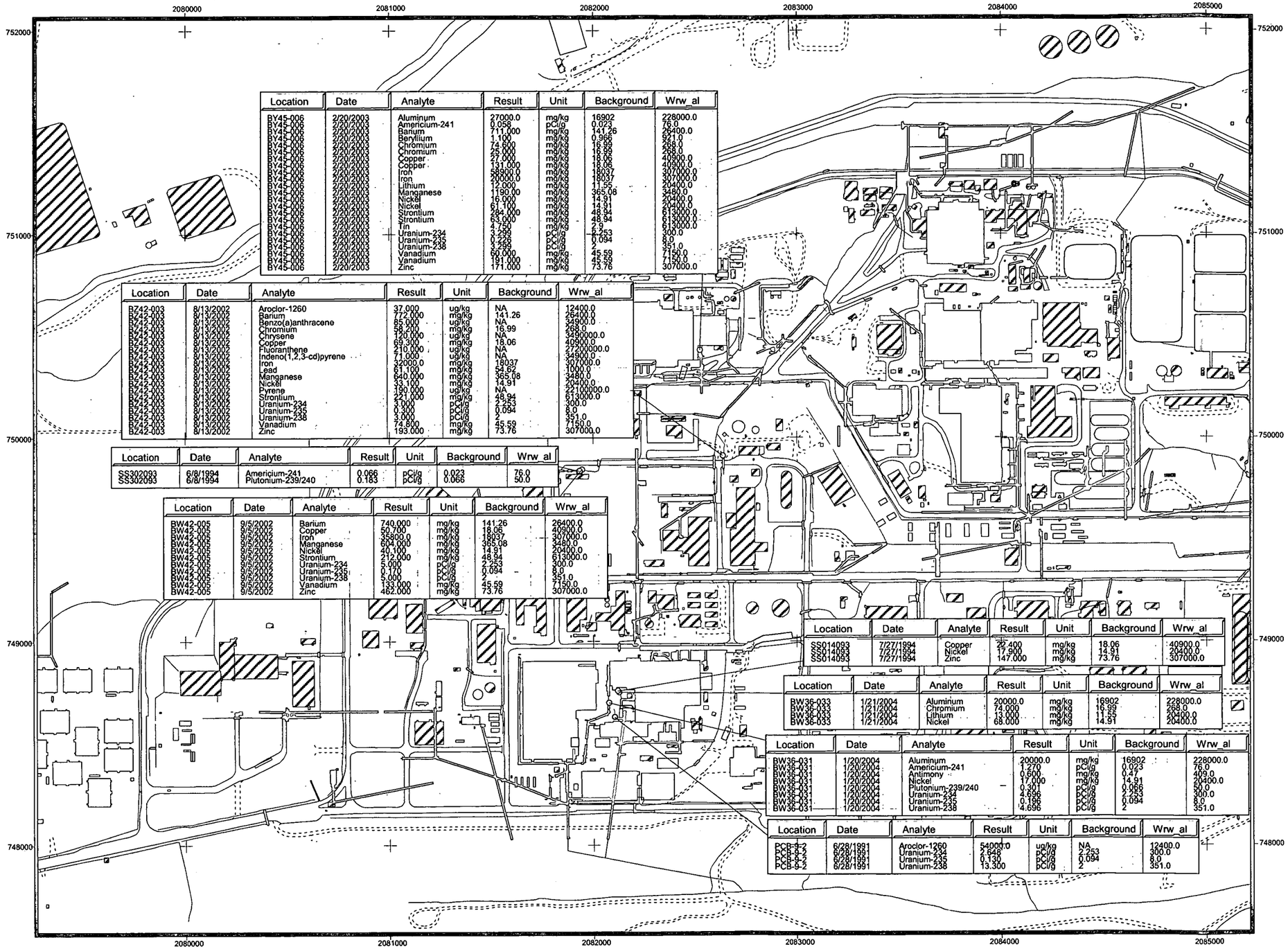


Location	Date	Analyte	Result	Unit	Background	Wrw_al
BY45-006	2/20/2003	Aluminum	27000.0	mg/kg	16902	228000.0
BY45-006	2/20/2003	Americium-241	0.058	pCi/g	0.023	76.0
BY45-006	2/20/2003	Barium	711.000	mg/kg	141.26	26400.0
BY45-006	2/20/2003	Beryllium	1.100	mg/kg	0.966	921.0
BY45-006	2/20/2003	Chromium	74.600	mg/kg	16.99	268.0
BY45-006	2/20/2003	Chromium	25.000	mg/kg	16.99	268.0
BY45-006	2/20/2003	Copper	27.000	mg/kg	18.06	40900.0
BY45-006	2/20/2003	Copper	131.000	mg/kg	18.06	40900.0
BY45-006	2/20/2003	Iron	58300.0	mg/kg	18037	307000.0
BY45-006	2/20/2003	Iron	20000.0	mg/kg	18037	307000.0
BY45-006	2/20/2003	Lithium	12.000	mg/kg	11.55	20400.0
BY45-006	2/20/2003	Manganese	1190.00	mg/kg	365.08	3480.0
BY45-006	2/20/2003	Nickel	16.000	mg/kg	14.91	20400.0
BY45-006	2/20/2003	Nickel	61.100	mg/kg	14.91	20400.0
BY45-006	2/20/2003	Strontium	284.000	mg/kg	48.94	613000.0
BY45-006	2/20/2003	Strontium	53.000	mg/kg	48.94	613000.0
BY45-006	2/20/2003	Tin	4.750	mg/kg	2.9	613000.0
BY45-006	2/20/2003	Uranium-234	3.299	pCi/g	2.253	300.0
BY45-006	2/20/2003	Uranium-235	0.268	pCi/g	0.094	8.0
BY45-006	2/20/2003	Uranium-238	3.299	pCi/g	2	351.0
BY45-006	2/20/2003	Vanadium	60.000	mg/kg	45.59	7150.0
BY45-006	2/20/2003	Vanadium	191.000	mg/kg	45.59	7150.0
BY45-006	2/20/2003	Zinc	171.000	mg/kg	73.76	307000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
BZ42-003	8/13/2002	Aroclor-1260	37.000	ug/kg	NA	12400.0
BZ42-003	8/13/2002	Barium	772.000	mg/kg	141.26	26400.0
BZ42-003	8/13/2002	Benzo(a)anthracene	85.000	ug/kg	NA	34900.0
BZ42-003	8/13/2002	Chromium	58.200	mg/kg	16.99	268.0
BZ42-003	8/13/2002	Chrysene	120.000	ug/kg	NA	3490000.0
BZ42-003	8/13/2002	Copper	69.300	mg/kg	18.06	40900.0
BZ42-003	8/13/2002	Fluoranthene	210.000	ug/kg	NA	27200000.0
BZ42-003	8/13/2002	Indeno(1,2,3-cd)pyrene	71.000	ug/kg	NA	34900.0
BZ42-003	8/13/2002	Iron	32000.0	mg/kg	18037	307000.0
BZ42-003	8/13/2002	Lead	61.100	mg/kg	54.62	1000.0
BZ42-003	8/13/2002	Manganese	640.000	mg/kg	365.08	3480.0
BZ42-003	8/13/2002	Nickel	33.100	mg/kg	14.91	20400.0
BZ42-003	8/13/2002	Pyrene	190.000	ug/kg	NA	22100000.0
BZ42-003	8/13/2002	Strontium	221.000	mg/kg	48.94	613000.0
BZ42-003	8/13/2002	Uranium-234	4.000	pCi/g	2.253	300.0
BZ42-003	8/13/2002	Uranium-235	0.300	pCi/g	0.094	8.0
BZ42-003	8/13/2002	Uranium-238	3.000	pCi/g	2	351.0
BZ42-003	8/13/2002	Vanadium	74.800	mg/kg	45.59	7150.0
BZ42-003	8/13/2002	Zinc	193.000	mg/kg	73.76	307000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
SS302093	6/8/1994	Americium-241	0.066	pCi/g	0.023	76.0
SS302093	6/8/1994	Plutonium-239/240	0.183	pCi/g	0.066	50.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
BW42-005	9/5/2002	Barium	740.000	mg/kg	141.26	26400.0
BW42-005	9/5/2002	Copper	50.700	mg/kg	18.06	40900.0
BW42-005	9/5/2002	Iron	35800.0	mg/kg	18037	307000.0
BW42-005	9/5/2002	Manganese	604.000	mg/kg	365.08	3480.0
BW42-005	9/5/2002	Nickel	40.100	mg/kg	14.91	20400.0
BW42-005	9/5/2002	Strontium	212.000	mg/kg	48.94	613000.0
BW42-005	9/5/2002	Uranium-234	5.000	pCi/g	2.253	300.0
BW42-005	9/5/2002	Uranium-235	0.170	pCi/g	0.094	8.0
BW42-005	9/5/2002	Uranium-238	5.000	pCi/g	2	351.0
BW42-005	9/5/2002	Vanadium	133.000	mg/kg	45.59	7150.0
BW42-005	9/5/2002	Zinc	462.000	mg/kg	73.76	307000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
SS014093	7/27/1994	Copper	22.400	mg/kg	18.06	40900.0
SS014093	7/27/1994	Nickel	17.900	mg/kg	14.91	20400.0
SS014093	7/27/1994	Zinc	147.000	mg/kg	73.76	307000.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
BW36-033	1/21/2004	Aluminum	20000.0	mg/kg	16902	228000.0
BW36-033	1/21/2004	Chromium	74.000	mg/kg	16.99	268.0
BW36-033	1/21/2004	Lithium	13.000	mg/kg	11.55	20400.0
BW36-033	1/21/2004	Nickel	68.000	mg/kg	14.91	20400.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
BW36-031	1/20/2004	Aluminum	20000.0	mg/kg	16902	228000.0
BW36-031	1/20/2004	Americium-241	1.270	pCi/g	0.023	76.0
BW36-031	1/20/2004	Antimony	0.600	mg/kg	0.47	409.0
BW36-031	1/20/2004	Nickel	17.000	mg/kg	14.91	20400.0
BW36-031	1/20/2004	Plutonium-239/240	0.301	pCi/g	0.066	50.0
BW36-031	1/20/2004	Uranium-234	4.696	pCi/g	2.253	300.0
BW36-031	1/20/2004	Uranium-235	0.196	pCi/g	0.094	8.0
BW36-031	1/20/2004	Uranium-238	4.696	pCi/g	2	351.0

Location	Date	Analyte	Result	Unit	Background	Wrw_al
PCB-9-2	6/28/1991	Aroclor-1260	5400000	ug/kg	NA	12400.0
PCB-9-2	6/28/1991	Uranium-234	2.648	pCi/g	2.253	300.0
PCB-9-2	6/28/1991	Uranium-235	0.130	pCi/g	0.094	8.0
PCB-9-2	6/28/1991	Uranium-238	13.300	pCi/g	2	351.0

Figure 5b - Constitutents Above Background in Surface Soil West

KEY

- WRW Exceedance
- Less than WRW and greater than background
- Storm drain
- Dirt road
- Solar pond
- PAC 400-803
- PAC 700-1103
- IHSS Group 400-5
- IHSS Group 900-1
- PAC 700-143
- Stream, ditch, or other drainage feature
- Lake
- Asphalt
- Demolished building
- Standing building

DRAFT

N W E S

450 0 450 Feet

Scale = 1: 6000

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

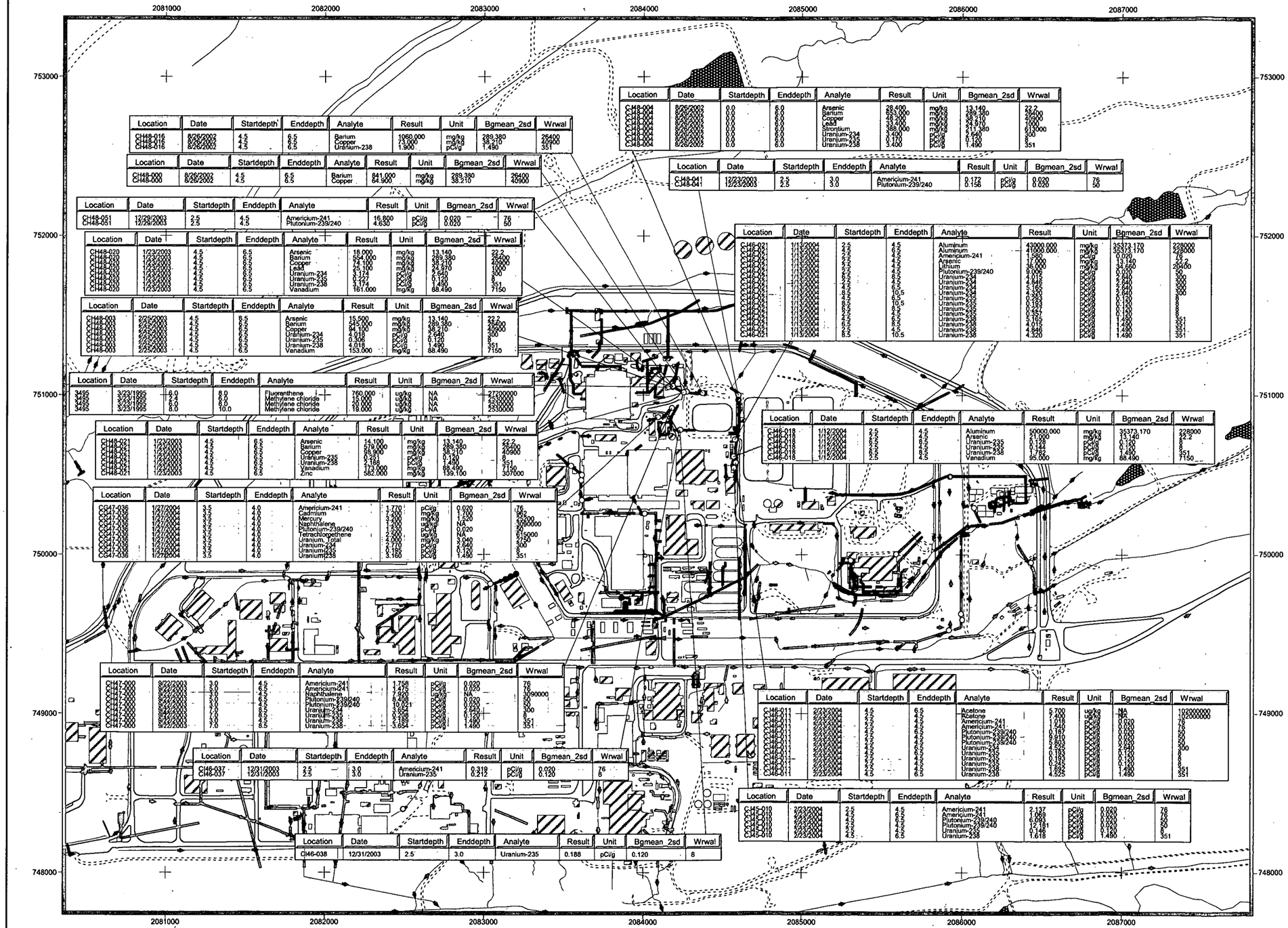
U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: RADMS Date: 9.22.04

Prepared for: KAISER•HILL COMPANY

File: W:\Projects\Fy2004\Storm&SanitaryDrains\culvert_additional_092104.apr

Figure 6a
Constitutents Above Background in Subsurface Soil Northeast Quadrant



Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH48-016	8/26/2002	4.5	6.5	Barium	1060.000	mg/kg	289.380	26400
CH48-016	8/26/2002	4.5	6.5	Copper	73.000	mg/kg	38.210	40900
CH48-016	8/26/2002	4.5	6.5	Uranium-238	1.900	pCi/g	1.490	351

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH48-000	8/26/2002	4.5	6.5	Barium	841.000	mg/kg	289.380	26400
CH48-000	8/26/2002	4.5	6.5	Copper	64.900	mg/kg	38.210	40900

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH48-051	12/29/2003	2.5	4.5	Americium-241	16.800	pCi/g	0.020	76
CH48-051	12/29/2003	2.5	4.5	Plutonium-239/240	4.630	pCi/g	0.020	50

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH48-020	1/23/2003	4.5	6.5	Arsenic	18.000	mg/kg	13.140	22.2
CH48-020	1/23/2003	4.5	6.5	Barium	554.000	mg/kg	289.380	26400
CH48-020	1/23/2003	4.5	6.5	Copper	74.100	mg/kg	38.210	40900
CH48-020	1/23/2003	4.5	6.5	Lead	25.100	mg/kg	24.970	1000
CH48-020	1/23/2003	4.5	6.5	Uranium-234	3.124	pCi/g	2.640	300
CH48-020	1/23/2003	4.5	6.5	Uranium-235	0.227	pCi/g	0.120	8
CH48-020	1/23/2003	4.5	6.5	Uranium-238	3.174	pCi/g	1.490	351
CH48-020	1/23/2003	4.5	6.5	Vanadium	161.000	mg/kg	88.490	7150

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH48-003	2/25/2003	4.5	6.5	Arsenic	15.500	mg/kg	13.140	22.2
CH48-003	2/25/2003	4.5	6.5	Barium	545.000	mg/kg	289.380	26400
CH48-003	2/25/2003	4.5	6.5	Copper	94.100	mg/kg	38.210	40900
CH48-003	2/25/2003	4.5	6.5	Uranium-234	4.918	pCi/g	2.640	300
CH48-003	2/25/2003	4.5	6.5	Uranium-235	0.308	pCi/g	0.120	8
CH48-003	2/25/2003	4.5	6.5	Uranium-238	4.016	pCi/g	1.490	351
CH48-003	2/25/2003	4.5	6.5	Vanadium	153.000	mg/kg	88.490	7150

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
3495	3/23/1995	6.0	8.0	Fluoranthene	760.000	ug/kg	NA	27200000
3495	3/23/1995	2.2	6.0	Methylene chloride	15.000	ug/kg	NA	2530000
3495	3/23/1995	6.0	8.0	Methylene chloride	20.000	ug/kg	NA	2530000
3495	3/23/1995	8.0	10.0	Methylene chloride	19.000	ug/kg	NA	2530000

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH48-021	1/23/2003	4.5	6.5	Arsenic	14.100	mg/kg	13.140	22.2
CH48-021	1/23/2003	4.5	6.5	Barium	678.000	mg/kg	289.380	26400
CH48-021	1/23/2003	4.5	6.5	Copper	68.900	mg/kg	38.210	40900
CH48-021	1/23/2003	4.5	6.5	Uranium-235	0.283	pCi/g	0.120	8
CH48-021	1/23/2003	4.5	6.5	Uranium-238	4.186	pCi/g	1.490	351
CH48-021	1/23/2003	4.5	6.5	Vanadium	173.000	mg/kg	88.490	7150
CH48-021	1/23/2003	4.5	6.5	Zinc	582.000	mg/kg	139.100	307000

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CG47-036	1/27/2004	3.5	4.0	Americium-241	1.770	pCi/g	0.020	76
CG47-036	1/27/2004	3.5	4.0	Cadmium	7.200	mg/kg	1.520	822
CG47-036	1/27/2004	3.5	4.0	Mercury	3.200	mg/kg	1.520	2200
CG47-036	1/27/2004	3.5	4.0	Naphthalene	1.200	ug/kg	NA	1090000
CG47-036	1/27/2004	3.5	4.0	Plutonium-239/240	1.500	pCi/g	0.020	50
CG47-036	1/27/2004	3.5	4.0	Tetrachloroethene	2.200	ug/kg	NA	615000
CG47-036	1/27/2004	3.5	4.0	Uranium_Total	2.500	mg/kg	3.040	2730
CG47-036	1/27/2004	3.5	4.0	Uranium-234	2.770	pCi/g	2.640	300
CG47-036	1/27/2004	3.5	4.0	Uranium-235	0.195	pCi/g	0.120	8
CG47-036	1/27/2004	3.5	4.0	Uranium-238	3.160	pCi/g	1.490	351

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH47-000	9/22/2003	3.0	4.5	Americium-241	1.758	pCi/g	0.020	76
CH47-000	9/22/2003	5.0	6.5	Americium-241	1.475	pCi/g	0.020	76
CH47-000	9/22/2003	3.0	4.5	Naphthalene	7.900	ug/kg	NA	1090000
CH47-000	9/22/2003	5.0	6.5	Plutonium-239/240	6.268	pCi/g	0.020	50
CH47-000	9/22/2003	3.0	4.5	Plutonium-239/240	10.621	pCi/g	0.020	50
CH47-000	9/22/2003	5.0	6.5	Uranium-234	2.604	pCi/g	2.640	300
CH47-000	9/22/2003	7.0	8.5	Uranium-235	0.208	pCi/g	0.120	8
CH47-000	9/22/2003	7.0	8.5	Uranium-238	3.169	pCi/g	1.490	351
CH47-000	9/22/2003	7.0	8.5	Uranium-238	3.654	pCi/g	1.490	351

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH46-037	12/31/2003	2.5	3.0	Americium-241	0.319	pCi/g	0.020	76
CH46-037	12/31/2003	2.5	3.0	Uranium-235	0.212	pCi/g	0.120	8

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH46-038	12/31/2003	2.5	3.0	Uranium-235	0.188	pCi/g	0.120	8

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH48-004	8/26/2002	0.0	6.0	Arsenic	28.400	mg/kg	13.140	22.2
CH48-004	8/26/2002	0.0	6.0	Barium	853.000	mg/kg	289.380	26400
CH48-004	8/26/2002	0.0	6.0	Copper	99.200	mg/kg	38.210	40900
CH48-004	8/26/2002	0.0	6.0	Lead	33.400	mg/kg	24.970	1000
CH48-004	8/26/2002	0.0	6.0	Strontium	388.000	mg/kg	211.380	613000
CH48-004	8/26/2002	0.0	6.0	Uranium-234	3.490	pCi/g	2.640	300
CH48-004	8/26/2002	0.0	6.0	Uranium-235	0.210	pCi/g	0.120	8
CH48-004	8/26/2002	0.0	6.0	Uranium-238	3.400	pCi/g	1.490	351

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH48-041	12/23/2003	2.5	3.0	Americium-241	0.172	pCi/g	0.020	76
CH48-041	12/23/2003	2.5	3.0	Plutonium-239/240	0.156	pCi/g	0.020	50

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH46-021	1/13/2004	2.5	4.5	Aluminum	43000.000	mg/kg	35373.170	228000
CH46-021	1/13/2004	4.5	6.5	Aluminum	41000.000	mg/kg	35373.170	228000
CH46-021	1/13/2004	2.5	4.5	Americium-241	1.560	pCi/g	0.020	76
CH46-021	1/13/2004	2.5	4.5	Arsenic	17.000	mg/kg	13.140	22.2
CH46-021	1/13/2004	2.5	4.5	Lithium	36.000	mg/kg	32.660	20400
CH46-021	1/13/2004	2.5	4.5	Plutonium-239/240	9.000	pCi/g	0.020	50
CH46-021	1/13/2004	6.5	6.5	Uranium-234	4.015	pCi/g	2.640	300
CH46-021	1/13/2004	4.5	6.5	Uranium-234	4.948	pCi/g	2.640	300
CH46-021	1/13/2004	4.5	6.5	Uranium-234	5.165	pCi/g	2.640	300
CH46-021	1/13/2004	6.5	10.5	Uranium-234	4.260	pCi/g	2.640	300
CH46-021	1/13/2004	6.5	10.5	Uranium-235	0.263	pCi/g	0.120	8
CH46-021	1/13/2004	8.5	8.5	Uranium-235	0.193	pCi/g	0.120	8
CH46-021	1/13/2004	8.5	8.5	Uranium-235	0.227	pCi/g	0.120	8
CH46-021	1/13/2004	2.5	4.5	Uranium-235	0.357	pCi/g	0.120	8
CH46-021	1/13/2004	6.5	6.5	Uranium-235	5.165	pCi/g	1.490	351
CH46-021	1/13/2004	6.5	8.5	Uranium-238	4.015	pCi/g	1.490	351
CH46-021	1/13/2004	4.5	6.5	Uranium-238	4.948	pCi/g	1.490	351
CH46-021	1/13/2004	8.5	10.5	Uranium-238	4.320	pCi/g	1.490	351

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH46-018	1/12/2004	2.5	4.5	Aluminum	50000.000	mg/kg	35373.170	228000
CH46-018	1/12/2004	4.5	6.5	Arsenic	21.000	mg/kg	13.140	22.2
CH46-018	1/12/2004	6.5	8.5	Uranium-235	0.128	pCi/g	0.120	8
CH46-018	1/12/2004	4.5	6.5	Uranium-235	0.144	pCi/g	0.120	8
CH46-018	1/12/2004	6.5	8.5	Uranium-238	1.782	pCi/g	1.490	351
CH46-018	1/12/2004	2.5	4.5	Vanadium	95.000	mg/kg	88.490	7150

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH46-011	2/23/2004	4.5	6.5	Acetone	5.700	ug/kg	NA	1020000000
CH46-011	2/23/2004	2.5	4.5	Acetone	7.400	ug/kg	NA	1020000000
CH46-011	2/23/2004	2.5	4.5	Americium-241	1.018	pCi/g	0.020	76
CH46-011	2/23/2004	2.5	4.5	Americium-241	1.240	pCi/g	0.020	76
CH46-011	2/23/2004	2.5	4.5	Plutonium-239/240	0.767	pCi/g	0.020	50
CH46-011	2/23/2004	2.5	4.5	Plutonium-239/240	9.970	pCi/g	0.020	50
CH46-011	2/23/2004	4.5	6.5	Plutonium-239/240	2.503	pCi/g	0.020	50
CH46-011	2/23/2004	4.5	6.5	Uranium-234	3.600	pCi/g	2.640	300
CH46-011	2/23/2004	4.5	6.5	Uranium-235	0.193	pCi/g	0.120	8
CH46-011	2/23/2004	4.5	6.5	Uranium-235	0.183	pCi/g	0.120	8
CH46-011	2/23/2004	4.5	6.5	Uranium-235	0.245	pCi/g	0.120	8
CH46-011	2/23/2004	4.5	6.5	Uranium-238	1.692	pCi/g	1.490	351
CH46-011	2/23/2004	4.5	6.5	Uranium-238	4.525	pCi/g	1.490	351

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CH45-010	2/23/2004	2.5	4.5	Americium-241	2.137	pCi/g	0.020	76
CH45-010	2/23/2004	4.5	6.5	Americium-241	1.069	pCi/g	0.020	76
CH45-010	2/23/2004	4.5	6.5	Plutonium-239/240	6.093	pCi/g	0.020	50
CH45-010	2/23/2004	2.5	4.5	Plutonium-239/240	12.181	pCi/g	0.020	50
CH45-010	2/23/2004	2.5	4.5	Uranium-235	0.146	pCi/g	0.120	8
CH45-010	2/23/2004	4.5	6.5	Uranium-238	1.618	pCi/g	1.480	351

KEY

- WRW Exceedance
- Less than WRW and greater than background
- Less than background
- Surface water flow vector
- Storm drain
- Dirt road
- Solar ponds
- PAC 400-803
- PAC 700-1103
- IHSS 400-5
- IHSS 900-1
- PAC 700-143
- Streams
- Lakes
- Asphalt
- Demolished building
- Standing building

DRAFT

N
W E
S

500 0 500 Feet

Scale = 1:7,500

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:

RADMS

Prepared for:

Date:09.22.2004

KAISER-HILL COMPANY

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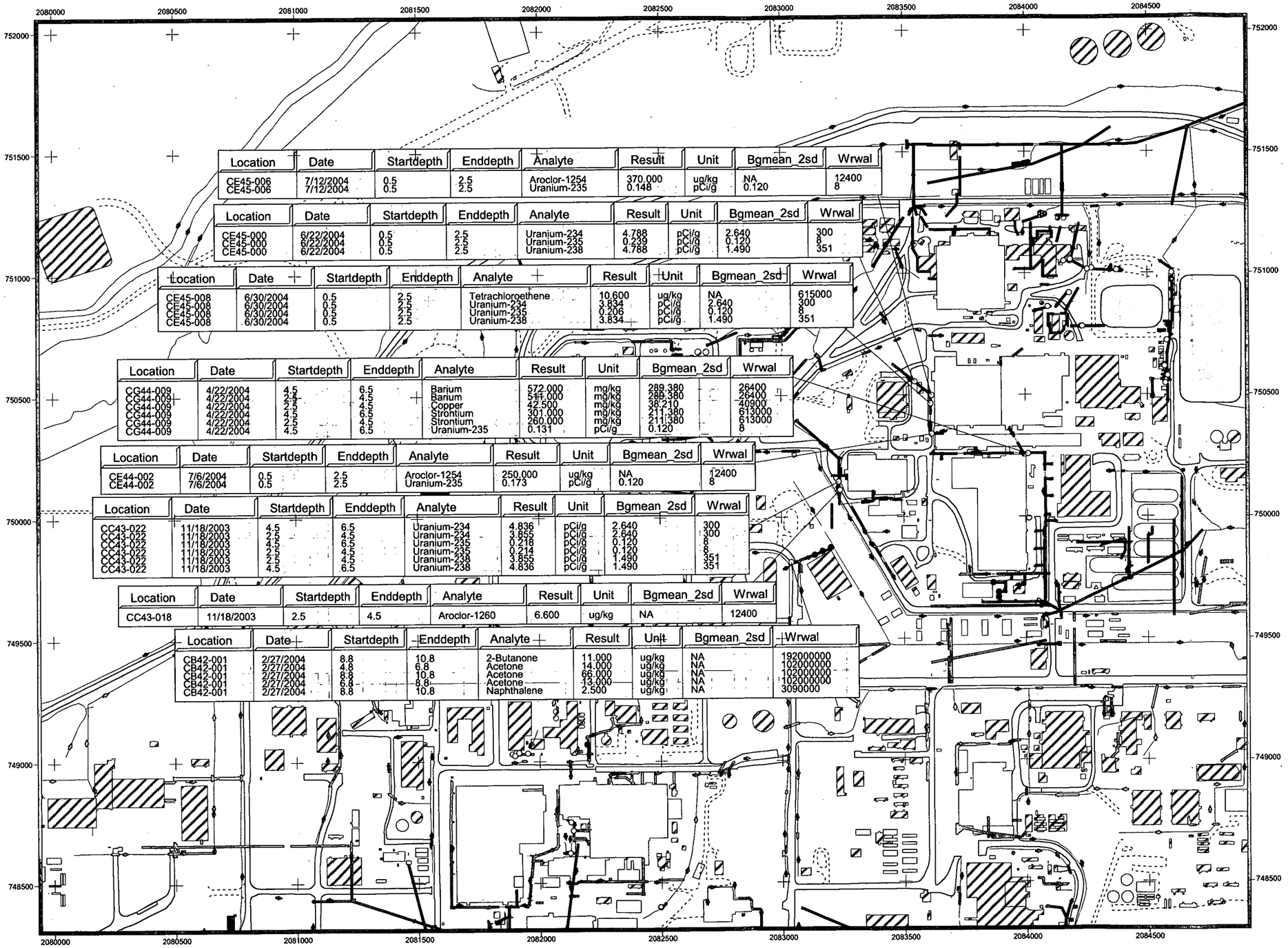

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CE45-006	7/12/2004	0.5	2.5	Aroclor-1254	370.000	ug/kg	NA	12400
CE45-006	7/12/2004	0.5	2.5	Uranium-235	0.148	pCi/g	0.120	8

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CE45-000	6/22/2004	0.5	2.5	Uranium-234	4.788	pCi/g	2.640	300
CE45-000	6/22/2004	0.5	2.5	Uranium-235	0.239	pCi/g	0.120	8
CE45-000	6/22/2004	0.5	2.5	Uranium-238	4.788	pCi/g	1.490	351

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CE45-008	6/30/2004	0.5	2.5	Tetrachloroethene	10.600	ug/kg	NA	615000
CE45-008	6/30/2004	0.5	2.5	Uranium-234	3.834	pCi/g	2.640	300
CE45-008	6/30/2004	0.5	2.5	Uranium-235	0.206	pCi/g	0.120	8
CE45-008	6/30/2004	0.5	2.5	Uranium-238	3.834	pCi/g	1.490	351

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CG44-009	4/22/2004	4.5	6.5	Barium	572.000	mg/kg	289.380	26400
CG44-009	4/22/2004	2.5	4.5	Barium	541.000	mg/kg	289.380	26400
CG44-009	4/22/2004	2.5	4.5	Copper	42.500	mg/kg	38.210	40900
CG44-009	4/22/2004	4.5	6.5	Strontium	301.000	mg/kg	211.380	613000
CG44-009	4/22/2004	2.5	4.5	Strontium	260.000	mg/kg	211.380	613000
CG44-009	4/22/2004	4.5	6.5	Uranium-235	0.131	pCi/g	0.120	8

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CE44-002	7/6/2004	0.5	2.5	Aroclor-1254	250.000	ug/kg	NA	12400
CE44-002	7/6/2004	0.5	2.5	Uranium-235	0.173	pCi/g	0.120	8

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CC43-022	11/18/2003	4.5	6.5	Uranium-234	4.836	pCi/g	2.640	300
CC43-022	11/18/2003	2.5	4.5	Uranium-234	3.855	pCi/g	2.640	300
CC43-022	11/18/2003	4.5	6.5	Uranium-235	0.218	pCi/g	0.120	8
CC43-022	11/18/2003	2.5	4.5	Uranium-235	0.214	pCi/g	0.120	8
CC43-022	11/18/2003	2.5	4.5	Uranium-238	3.855	pCi/g	1.490	351
CC43-022	11/18/2003	4.5	6.5	Uranium-238	4.836	pCi/g	1.490	351

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CC43-018	11/18/2003	2.5	4.5	Aroclor-1260	6.600	ug/kg	NA	12400

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CB42-001	2/27/2004	8.8	10.8	2-Butanone	11.000	ug/kg	NA	192000000
CB42-001	2/27/2004	4.8	6.8	Acetone	14.000	ug/kg	NA	102000000
CB42-001	2/27/2004	8.8	10.8	Acetone	66.000	ug/kg	NA	102000000
CB42-001	2/27/2004	6.8	8.8	Acetone	13.000	ug/kg	NA	102000000
CB42-001	2/27/2004	8.8	10.8	Naphthalene	2.500	ug/kg	NA	3090000

Figure 6b
Constitutents Above Background in Subsurface Soil Northwest Quadrant

KEY

- WRW Exceedance
- Less than WRW and greater than background
- Less than background
- Surface water flow vector
- Storm drain
- Dirt road
- Solar ponds
- PAC 400-803
- PAC 700-1103
- IHSS 400-5
- IHSS 900-1
- PAC 700-143
- Streams
- Lakes
- Asphalt
- Demolished building
- Standing building

DRAFT

N W E S

300 0 300 Feet

Scale = 1:5,000

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

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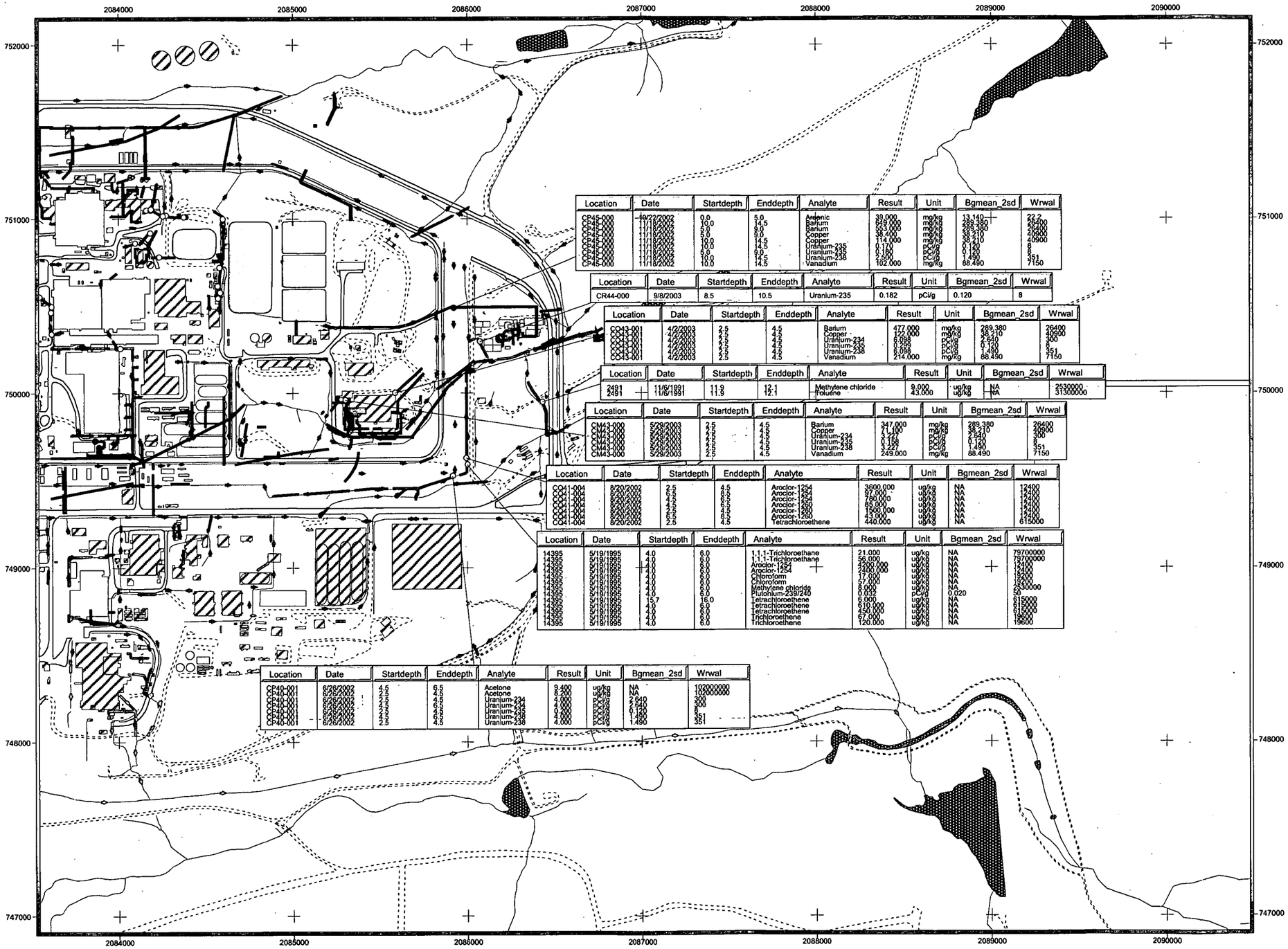

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CP45-000	10/22/2002	0.0	5.0	Arsenic	39.000	mg/kg	13.140	22.2
CP45-000	11/18/2002	10.0	14.5	Barium	649.000	mg/kg	289.380	26400
CP45-000	11/18/2002	5.0	9.0	Barium	453.000	mg/kg	289.380	26400
CP45-000	11/18/2002	5.0	9.0	Copper	38.400	mg/kg	38.210	40900
CP45-000	11/18/2002	10.0	14.5	Copper	114.000	mg/kg	38.210	40900
CP45-000	11/18/2002	10.0	14.5	Uranium-235	0.170	pCi/g	0.120	8
CP45-000	11/18/2002	5.0	9.0	Uranium-235	0.180	pCi/g	0.120	8
CP45-000	11/18/2002	10.0	14.5	Uranium-238	1.520	pCi/g	1.490	351
CP45-000	11/18/2002	10.0	14.5	Vanadium	162.000	mg/kg	88.490	7150

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CR44-000	9/8/2003	8.5	10.5	Uranium-235	0.182	pCi/g	0.120	8

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CC43-001	4/2/2003	2.5	4.5	Barium	477.000	mg/kg	289.380	26400
CC43-001	4/2/2003	2.5	4.5	Copper	122.000	mg/kg	38.210	40900
CC43-001	4/2/2003	2.5	4.5	Uranium-234	6.098	pCi/g	2.640	300
CC43-001	4/2/2003	2.5	4.5	Uranium-235	0.293	pCi/g	0.120	8
CC43-001	4/2/2003	2.5	4.5	Uranium-238	6.098	pCi/g	1.490	351
CC43-001	4/2/2003	2.5	4.5	Vanadium	214.000	mg/kg	88.490	7150

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
2481	11/6/1991	11.9	12.1	Methylene chloride	9.000	ug/kg	NA	2630000
2481	11/6/1991	11.9	12.1	Toluene	43.000	ug/kg	NA	31300000

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CM43-000	5/29/2003	2.5	4.5	Barium	347.000	mg/kg	289.380	26400
CM43-000	5/29/2003	2.5	4.5	Copper	71.100	mg/kg	38.210	40900
CM43-000	5/29/2003	2.5	4.5	Uranium-234	3.722	pCi/g	2.640	300
CM43-000	5/29/2003	2.5	4.5	Uranium-235	0.154	pCi/g	0.120	8
CM43-000	5/29/2003	2.5	4.5	Uranium-238	3.722	pCi/g	1.490	351
CM43-000	5/29/2003	2.5	4.5	Vanadium	249.000	mg/kg	88.490	7150

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CQ41-004	8/20/2002	2.5	4.5	Aroclor-1254	3600.000	ug/kg	NA	12400
CQ41-004	8/20/2002	6.5	6.5	Aroclor-1254	97.000	ug/kg	NA	12400
CQ41-004	8/20/2002	4.5	6.5	Aroclor-1254	780.000	ug/kg	NA	12400
CQ41-004	8/20/2002	4.5	6.5	Aroclor-1260	63.000	ug/kg	NA	12400
CQ41-004	8/20/2002	2.5	4.5	Aroclor-1260	1500.000	ug/kg	NA	12400
CQ41-004	8/20/2002	6.5	6.5	Aroclor-1260	43.000	ug/kg	NA	12400
CQ41-004	8/20/2002	2.5	4.5	Tetrachloroethene	440.000	ug/kg	NA	615000

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
14395	5/19/1995	4.0	6.0	1,1,1-Trichloroethane	21.000	ug/kg	NA	79700000
14395	5/19/1995	4.0	6.0	1,1,1-Trichloroethane	56.000	ug/kg	NA	79700000
14395	5/19/1995	4.0	6.0	Aroclor-1254	4200.000	ug/kg	NA	12400
14395	5/19/1995	4.0	6.0	Aroclor-1254	2400.000	ug/kg	NA	12400
14395	5/19/1995	4.0	6.0	Chloroform	17.000	ug/kg	NA	15200
14395	5/19/1995	4.0	6.0	Chloroform	57.000	ug/kg	NA	15200
14395	5/19/1995	4.0	6.0	Methylene chloride	8.000	ug/kg	NA	2630000
14395	5/19/1995	4.0	6.0	Plutonium-239/240	0.032	pCi/g	0.020	20
14395	5/19/1995	15.7	16.0	Tetrachloroethene	6.000	ug/kg	NA	615000
14395	5/19/1995	4.0	6.0	Tetrachloroethene	610.000	ug/kg	NA	615000
14395	5/19/1995	4.0	6.0	Tetrachloroethene	450.000	ug/kg	NA	615000
14395	5/19/1995	4.0	6.0	Trichloroethene	67.000	ug/kg	NA	19600
14395	5/19/1995	4.0	6.0	Trichloroethene	120.000	ug/kg	NA	19600

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
CP40-001	6/26/2002	4.5	6.5	Acetone	9.400	ug/kg	NA	102000000
CP40-001	6/26/2002	2.5	4.5	Acetone	8.200	ug/kg	NA	102000000
CP40-001	6/26/2002	2.5	4.5	Uranium-234	4.000	pCi/g	2.640	300
CP40-001	6/26/2002	4.5	6.5	Uranium-234	4.000	pCi/g	2.640	300
CP40-001	6/26/2002	2.5	4.5	Uranium-235	0.120	pCi/g	0.120	8
CP40-001	6/26/2002	4.5	6.5	Uranium-238	4.000	pCi/g	1.490	351
CP40-001	6/26/2002	2.5	4.5	Uranium-238	4.000	pCi/g	1.490	351

Figure 6c
Constitutents Above Background in Subsurface Soil Southeast Quadrant

KEY

- WRW Exceedance
- Less than WRW and greater than background
- Less than background
- Surface water flow vector
- Storm drain
- Dirt road
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- IHSS 400-5
- IHSS 900-1
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- Demolished building
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400 0 400 Feet

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State Plane Coordinate Projection
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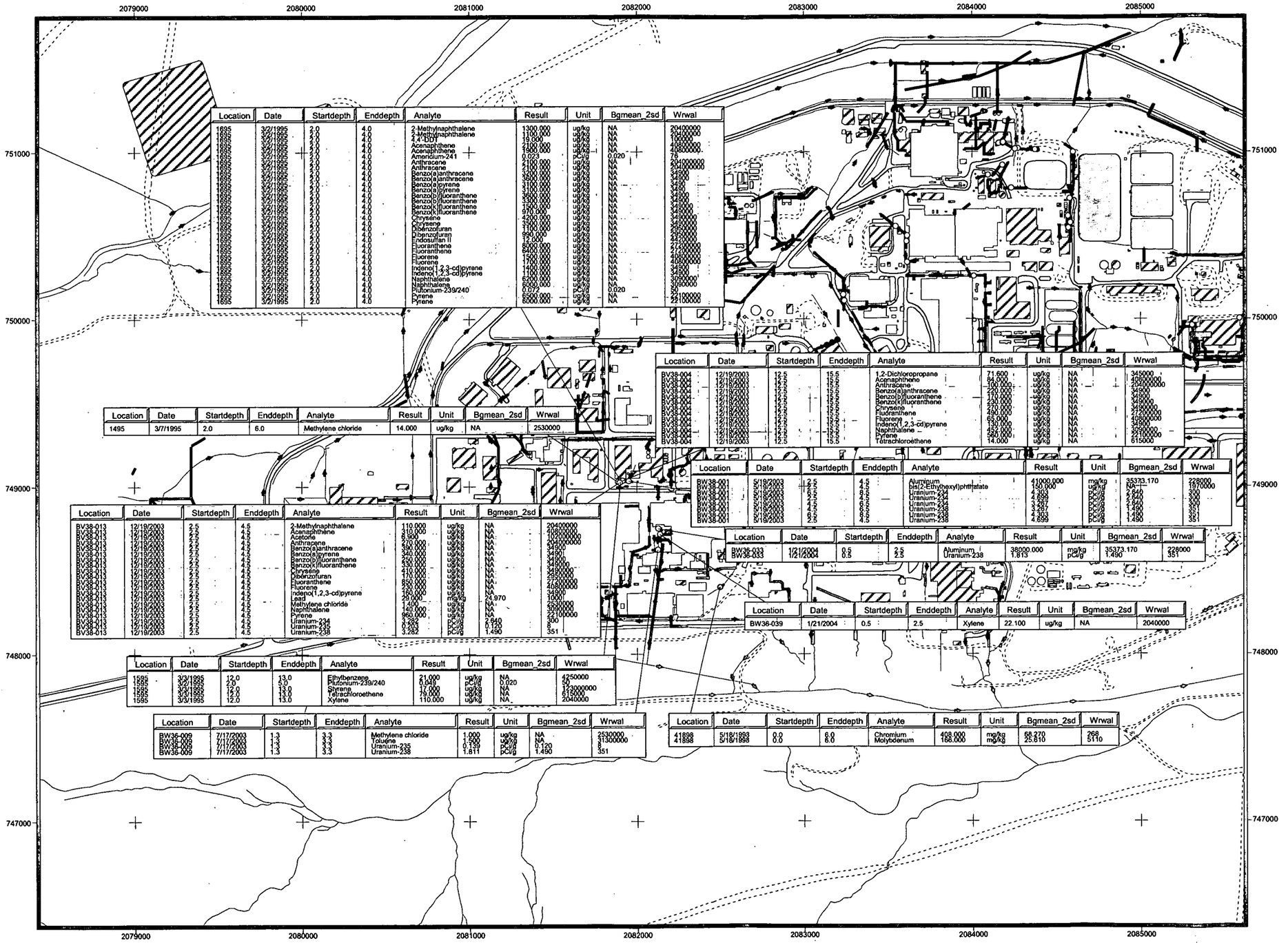

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
1695	3/2/1995	2.0	4.0	2-Methylnaphthalene	1300.000	ug/kg	NA	20400000
1695	3/2/1995	2.0	4.0	2-Methylnaphthalene	1100.000	ug/kg	NA	20400000
1695	3/2/1995	2.0	4.0	4,4'-DDT	19.000	ug/kg	NA	1000000
1695	3/2/1995	2.0	4.0	Acenaphthene	2100.000	ug/kg	NA	40800000
1695	3/2/1995	2.0	4.0	Acenaphthene	1400.000	ug/kg	NA	40800000
1695	3/2/1995	2.0	4.0	Americium-241	0.023	pCi/g	0.020	76
1695	3/2/1995	2.0	4.0	Anthracene	2100.000	ug/kg	NA	204000000
1695	3/2/1995	2.0	4.0	Anthracene	2100.000	ug/kg	NA	204000000
1695	3/2/1995	2.0	4.0	Benzo(a)anthracene	3200.000	ug/kg	NA	34900
1695	3/2/1995	2.0	4.0	Benzo(a)anthracene	3600.000	ug/kg	NA	34900
1695	3/2/1995	2.0	4.0	Benzo(a)pyrene	3100.000	ug/kg	NA	3490
1695	3/2/1995	2.0	4.0	Benzo(a)pyrene	3100.000	ug/kg	NA	3490
1695	3/2/1995	2.0	4.0	Benzo(b)fluoranthene	3600.000	ug/kg	NA	34900
1695	3/2/1995	2.0	4.0	Benzo(b)fluoranthene	3300.000	ug/kg	NA	34900
1695	3/2/1995	2.0	4.0	Benzo(k)fluoranthene	1500.000	ug/kg	NA	349000
1695	3/2/1995	2.0	4.0	Benzo(k)fluoranthene	970.000	ug/kg	NA	349000
1695	3/2/1995	2.0	4.0	Chrysene	4200.000	ug/kg	NA	3490000
1695	3/2/1995	2.0	4.0	Chrysene	3500.000	ug/kg	NA	3490000
1695	3/2/1995	2.0	4.0	Dibenzofuran	1100.000	ug/kg	NA	2550000
1695	3/2/1995	2.0	4.0	Dibenzofuran	990.000	ug/kg	NA	2550000
1695	3/2/1995	2.0	4.0	Endosulfan II	12.000	ug/kg	NA	2420000
1695	3/2/1995	2.0	4.0	Fluoranthene	6800.000	ug/kg	NA	27200000
1695	3/2/1995	2.0	4.0	Fluoranthene	6400.000	ug/kg	NA	27200000
1695	3/2/1995	2.0	4.0	Fluorene	1500.000	ug/kg	NA	40800000
1695	3/2/1995	2.0	4.0	Fluorene	1500.000	ug/kg	NA	40800000
1695	3/2/1995	2.0	4.0	Indeno(1,2,3-cd)pyrene	1400.000	ug/kg	NA	34900
1695	3/2/1995	2.0	4.0	Indeno(1,2,3-cd)pyrene	1100.000	ug/kg	NA	34900
1695	3/2/1995	2.0	4.0	Naphthalene	6200.000	ug/kg	NA	3090000
1695	3/2/1995	2.0	4.0	Naphthalene	5400.000	ug/kg	NA	3090000
1695	3/2/1995	2.0	4.0	Plutonium-239/240	0.072	pCi/g	0.020	20
1695	3/2/1995	2.0	4.0	Pyrene	6500.000	ug/kg	NA	22100000
1695	3/2/1995	2.0	4.0	Pyrene	5800.000	ug/kg	NA	22100000

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
1495	3/7/1995	2.0	6.0	Methylene chloride	14.000	ug/kg	NA	2530000

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
BV38-004	12/19/2003	12.5	15.5	1,2-Dichloropropane	71.600	ug/kg	NA	345000
BV38-004	12/19/2003	12.5	15.5	Acenaphthene	84.000	ug/kg	NA	40800000
BV38-004	12/19/2003	12.5	15.5	Anthracene	100.000	ug/kg	NA	204000000
BV38-004	12/19/2003	12.5	15.5	Benzo(a)anthracene	220.000	ug/kg	NA	34900
BV38-004	12/19/2003	12.5	15.5	Benzo(b)fluoranthene	170.000	ug/kg	NA	34900
BV38-004	12/19/2003	12.5	15.5	Benzo(k)fluoranthene	230.000	ug/kg	NA	349000
BV38-004	12/19/2003	12.5	15.5	Chrysene	270.000	ug/kg	NA	3490000
BV38-004	12/19/2003	12.5	15.5	Fluoranthene	490.000	ug/kg	NA	27200000
BV38-004	12/19/2003	12.5	15.5	Fluorene	63.000	ug/kg	NA	40800000
BV38-004	12/19/2003	12.5	15.5	Indeno(1,2,3-cd)pyrene	130.000	ug/kg	NA	34900
BV38-004	12/19/2003	12.5	15.5	Naphthalene	452.000	ug/kg	NA	3090000
BV38-004	12/19/2003	12.5	15.5	Pyrene	560.000	ug/kg	NA	22100000
BV38-004	12/19/2003	12.5	15.5	Tetrachloroethene	14.000	ug/kg	NA	615000

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
BW38-001	5/18/2003	2.5	4.5	Aluminum	41000.000	mg/kg	35373.170	228000
BW38-001	5/18/2003	2.5	4.5	bis(2-Ethylhexyl)phthalate	150.000	ug/kg	NA	1970000
BW38-001	5/18/2003	6.5	8.5	Uranium-234	4.393	pCi/g	2.640	300
BW38-001	5/18/2003	6.5	8.5	Uranium-234	4.696	pCi/g	2.640	300
BW38-001	5/18/2003	4.5	6.5	Uranium-234	3.267	pCi/g	2.640	300
BW38-001	5/18/2003	4.5	6.5	Uranium-238	3.267	pCi/g	1.490	351
BW38-001	5/18/2003	6.5	8.5	Uranium-238	4.393	pCi/g	1.490	351
BW38-001	5/18/2003	2.5	4.5	Uranium-238	4.699	pCi/g	1.490	351

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
BW36-033	1/21/2004	0.5	2.5	Aluminum	38000.000	mg/kg	35373.170	228000
BW36-033	1/21/2004	0.5	2.5	Uranium-238	1.813	pCi/g	1.490	351

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
BW36-039	1/21/2004	0.5	2.5	Xylene	22.100	ug/kg	NA	2040000

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
BV38-013	12/19/2003	2.5	4.5	2-Methylnaphthalene	110.000	ug/kg	NA	20400000
BV38-013	12/19/2003	2.5	4.5	Acenaphthene	310.000	ug/kg	NA	40800000
BV38-013	12/19/2003	2.5	4.5	Acetone	8.900	ug/kg	NA	102000000
BV38-013	12/19/2003	2.5	4.5	Anthracene	270.000	ug/kg	NA	204000000
BV38-013	12/19/2003	2.5	4.5	Benzo(a)anthracene	340.000	ug/kg	NA	34900
BV38-013	12/19/2003	2.5	4.5	Benzo(a)pyrene	340.000	ug/kg	NA	3490
BV38-013	12/19/2003	2.5	4.5	Benzo(b)fluoranthene	250.000	ug/kg	NA	34900
BV38-013	12/19/2003	2.5	4.5	Benzo(k)fluoranthene	330.000	ug/kg	NA	34900
BV38-013	12/19/2003	2.5	4.5	Chrysene	410.000	ug/kg	NA	3490000
BV38-013	12/19/2003	2.5	4.5	Dibenzofuran	110.000	ug/kg	NA	2550000
BV38-013	12/19/2003	2.5	4.5	Fluoranthene	850.000	ug/kg	NA	27200000
BV38-013	12/19/2003	2.5	4.5	Fluorene	230.000	ug/kg	NA	40800000
BV38-013	12/19/2003	2.5	4.5	Indeno(1,2,3-cd)pyrene	150.000	ug/kg	NA	34900
BV38-013	12/19/2003	2.5	4.5	Lead	29.000	mg/kg	24.970	1000
BV38-013	12/19/2003	2.5	4.5	Methylene chloride	1.400	ug/kg	NA	2530000
BV38-013	12/19/2003	2.5	4.5	Naphthalene	140.000	ug/kg	NA	3090000
BV38-013	12/19/2003	2.5	4.5	Pyrene	960.000	ug/kg	NA	22100000
BV38-013	12/19/2003	2.5	4.5	Uranium-234	4.232	pCi/g	2.640	300
BV38-013	12/19/2003	2.5	4.5	Uranium-235	0.203	pCi/g	0.120	8
BV38-013	12/19/2003	2.5	4.5	Uranium-238	3.282	pCi/g	1.490	351

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
1595	3/3/1995	12.0	13.0	Ethylbenzene	21.000	ug/kg	NA	4250000
1595	3/3/1995	12.0	13.0	Plutonium-239/240	0.049	pCi/g	0.020	20
1595	3/3/1995	12.0	13.0	Styrene	17.000	ug/kg	NA	173000000
1595	3/3/1995	12.0	13.0	Tetrachloroethene	79.000	ug/kg	NA	615000
1595	3/3/1995	12.0	13.0	Xylene	110.000	ug/kg	NA	2040000

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
BW36-009	7/17/2003	1.3	3.3	Methylene chloride	1.000	ug/kg	NA	2530000
BW36-009	7/17/2003	1.3	3.3	Toluene	0.003	ug/kg	NA	51300000
BW36-009	7/17/2003	1.3	3.3	Uranium-235	0.139	pCi/g	0.120	8
BW36-009	7/17/2003	1.3	3.3	Uranium-238	1.811	pCi/g	1.490	351

Location	Date	Startdepth	Enddepth	Analyte	Result	Unit	Bgmean_2sd	Wrwal
41898	5/18/1998	0.0	6.0	Chromium	408.000	mg/kg	68.270	268
41898	5/18/1998	0.0	6.0	Molybdenum	168.000	mg/kg	25.810	5110

Figure 6d
Constitutents Above Background in Subsurface Soil Southwest Quadrant

KEY

- WRW Exceedance
- Less than WRW and greater than background
- Less than background
- Surface water flow vector
- Storm drain
- Dirt road
- Solar ponds
- PAC 400-803
- PAC 700-1103
- IHSS 400-5
- IHSS 900-1
- PAC 700-143
- Streams
- Lakes
- Asphalt
- Demolished building
- Standing building

DRAFT

N
W E
S

500 0 500 Fee

Scale = 1:7,250

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:

RADMS

Prepared for: Date:09.22.2004

KAISER-HILL COMPANY

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Figure 7

Industrial Area Proposed Culvert Disposition

EXPLANATION

- Retain & Remain Operational
- Retain & Plug Ends
- Remove
- Buffer Zone - Industrial Area Border

Map Features

- Buildings Remaining
- Demolished Buildings
- Paved Roads
- Dirt Roads
- Lakes
- Streams
- Railroad Tracks
- Fences

N

1:6,845
1 inch equals 570 feet

0 100 200 400 600 800 Feet

State Plane Coordinate Projection
Colorado Central Zone (3476)
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept. (303) 966-7707

Prepared By: CH2MHILL

Prepared For: KAISER-HILL COMPANY

May 26, 2004

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